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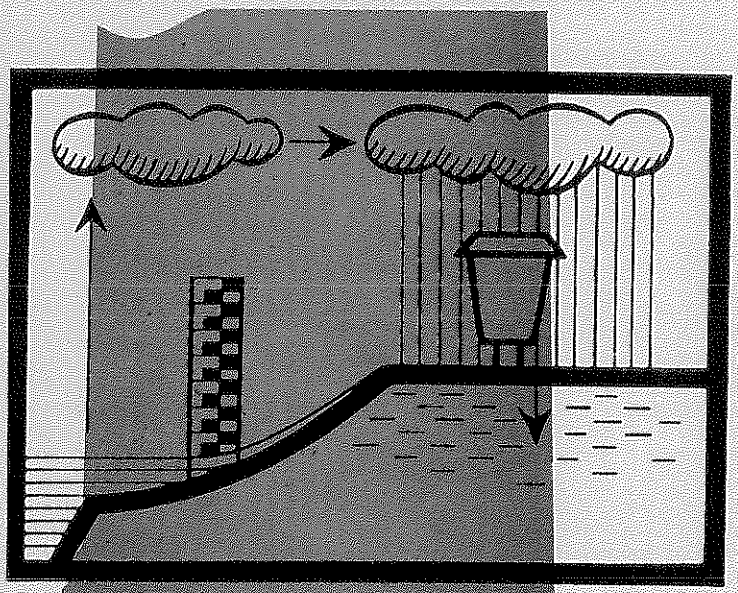
Systematic Development Of Methodologies In Planning Urban Water Resources For Medium Size Communities, Systematic Methodology To Numerically Evaluate Scenic Factors Of Landscape Application To Tippecanoe County, Indiana, Part Ii

M. C. Gardner

W. N. Melhorn

TECHNICAL REPORT 110

SYSTEMATIC METHODOLOGY TO NUMERICALLY EVALUATE SCENIC FACTORS OF LANDSCAPE: APPLICATION TO TIPPECANOE COUNTY, INDIANA



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M. C. Gardner

W. N. Melhorn

March 1979

PURDUE UNIVERSITY
WATER RESOURCES RESEARCH CENTER
WEST LAFAYETTE, INDIANA

SYSTEMATIC METHODOLOGY TO NUMERICALLY EVALUATE SCENIC FACTORS OF LANDSCAPE: APPLICATION TO TIPPECANOE COUNTY, INDIANA

by

M.C. Gardner
W.N. Melhorn

Department of Geosciences
Purdue University
West Lafayette, Indiana 47907

Purdue Water Resources Research Center
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FOREWORD AND ACKNOWLEDGEMENTS

This report describes the techniques employed and the methodologies used in developing a hierarchial evaluation scheme for making a quantitative assessment of landscape and surface water resources of the typical medium-sized urban community of Lafayette, Indiana. The project was part of a larger, interdisciplinary program that addresses many aspects of future land use and water problems that will be encountered by the growing populace of Tippecanoe County.

The Lafayette area has a recent geological history that has not blessed it with a profusion of towering mountains, sandy seashores, or mighty canyons. Some would say that the recent geological accident of the Ice Age has left us with a scenery that is incredibly dull, forgetting that the legacy of glacial action is some of the richest farm land in the world. Nevertheless, the study provides an excellent test for and improvement on certain procedures that have been developed for ranking of scenery as related to river valleys, and reported previously in Purdue Water Resources Center Technical Report 37. The results of the current study indicate that: (1) Tippecanoe County does contain scenic landscape and water resource values, at least in a local sense; (2) numerically-based aesthetic evaluation of total landscapes is possible and could provide a useful input to long-term planning and management during expansion stages

of urban areas; and (3) the general methodologies, with appropriate modification, can be used almost universally.

The authors are grateful to Mrs. Donna Scholz and Mr. Richard P. Mroczynski of the Laboratory for Applications of Remote Sensing (LARS) for preparation by ADP procedures of the land use map of Tippecanoe County. The voter opinion survey by Dr. Harry Potter on water resources use and management included certain questionnaire data that have been useful in understanding the visual perception and aesthetic appreciation of surface water bodies by individual citizens. Mr. Mark N. McBroom critically reviewed portions of the report dealing with philosophical frameworks of aesthetic evaluation and his suggestions are greatly appreciated.

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Abstract

Fifty landscapes were delineated in Tippecanoe County, Indiana on the basis of geomorphic and cultural criteria. Measurable physical, biologic and cultural parameters which enhance or detract from landscape aesthetics were identified, described, and arranged in matrix format. Aerial photographs, topographic maps, land use maps, drainage maps and field observations were used to categorize the scenic factors in each landscape. Factor analyses of the matrices, (using the methods of Leopold (1969) and Melhorn et al. (1974)), were employed to identify landscapes with unique scenic attributes. Scenic indices then were developed for the purpose of hierarchially ranking the scenic qualities of the various landscapes. Nine landscapes of unusual aesthetic value were identified in Tippecanoe County. Five of these are stream valleys whose scenic pleasantness is primarily attributable to the natural topographic diversity deriving from erosional processes and the prevalence of indigenous floral and faunal communities. The other four scenic landscapes are upland, interfluvial areas that owe their aesthetic appeal to a suite of depositional glacial features and patterns of agricultural land use.

The major streams and lakes of Tippecanoe County were evaluated qualitatively and quantitatively in terms of scenic and recreational usefulness, and recomendations for their future use were proposed.

INTRODUCTION

This report describes the application of geological and geomorphological research to formulation of a classification of the scenic resources of Tippecanoe County, Indiana. This investigation is part of an interdisciplinary study entitled "Systematic Development of Methodologies in Planning Urban Water Resources for Medium Size Communities", and thus we have placed some special emphasis on evaluation of water-related scenic resources of the study area.

Scenery is a natural resource that is an asset to the landscape in which it occurs. Like all resources, scenery is only a potential resource asset and does not become an actual asset until recognized, valued and utilized by a society with a particular level of cultural and economic development. For example, potential mineral and soil resources became true resources only when their development and utilitization became possible by a particular society. Prehistoric man had no concept of soil fertility --- his idea of a natural resource was restricted to a forest which harbored game or a brook teeming with fish. Likewise, our most valued natural resource, petroleum, has been used economically for only a century.

Resources are not "fixed assets". As a society develops, the number and type of resources exploited and utilized by

that society changes. Furthermore, the values that society places on resources constantly vary. Scenery has only recently received widespread recognition as a potential resource asset. The writings of Rousseau and Thoreau, and the paintings of Moran and Bierstadt aroused public interest in scenic resources during the last century (Linton, 1968; Melhorn et al., 1974). With the designation of Yosemite Valley as a state park in 1864 and the creation of Yellowstone National Park in 1872, scenery was first perceived as a natural resource to be used but managed by public policy and legislative action. Scenery since has been increasingly exploited as a resource. Indeed, scenic resources comprise a substantial part of the basis of the tourism industry. As with all natural resources, the dangers of unplanned or irrational exploitation can lead to scenic deterioration. This concept received Federal legislative recognition in 1976 with the passage of the Federal Land Policy and Management Act. This law designates "Areas of Critical Environmental Concern" which are "... areas within the public lands where special management attention is required ... to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources or other natural systems or processes ..." (Carver and Carver, 1976).

Historically, public policy with respect to scenery has focused on outdoor recreation and the identification

and preservation of discrete parcels of land, such as parks, with unique scenic characteristics. The concept of scenery as a portion of a landscape continuum has been postulated more recently. Scenery as a resource can be compared to soils, in that characteristic and economic value vary from place to place but join together to form a continual portion of the environment (Linton, 1968; Zube, 1973). The idea that commonplace landscapes constitute an important and valuable scenic resource has been largely ignored (Zube, 1973; Keller and Bedford, 1974).

Tippecanoe County, Indiana is a prosperous and growing community. Community growth requires an objective assessment of natural resources as a prerequisite for rational land use planning and management. Most natural resources can be economically evaluated in monetary terms; however, scenery does not exist by the ton or the bushel and it is not easily assessed in terms of dollar values. Scenic resources can be defined only in terms of the visual portion of a particular aesthetic experience, whose subjectivity is great and thus not amenable to economic assignation.

The objective of this study, then, is to evaluate the scenic resources of Tippecanoe County for the mere purpose of identifying areas of unusual beauty, particularly those that are water-related, and which may merit protection from future growth of urban areas that will destroy them. There

is no attempt to assign monetary values; however, certain observational methods and numerical procedures are outlined, developed, and applied to the local landscape. We believe these methods may be generally applicable, with modifications, to other areas and can be used as an aid to land use planning and management.

GEOGRAPHY OF TIPPECANOE COUNTY

Location, Population and Economy

Tippecanoe County is located in west-central Indiana (Fig. 1). It is bounded on the north by White County, on the east by Carroll and Clinton counties, on the south by Montgomery County and on the west by Benton, Warren and Fountain counties. The county seat and largest city, Lafayette, is located in the central part of the county. Lafayette is approximately 60 miles northwest of Indianapolis and 130 miles southeast of Chicago. Tippecanoe County is a rectangle encompassing 503 square miles, which represents 1.4% of the land area of the state of Indiana.

According to the 1970 census, the population of Tippecanoe County was 109,378. This comprises about 2.1% of total Indiana population. The Lafayette-West Lafayette urban area contains 64,112 people. The population of Tippecanoe County is expected to increase to 166,000 by 1990 (Bureau of Census, 1970).

The economy of the region is primarily based on agriculture, manufacturing and education. About 85% of the land

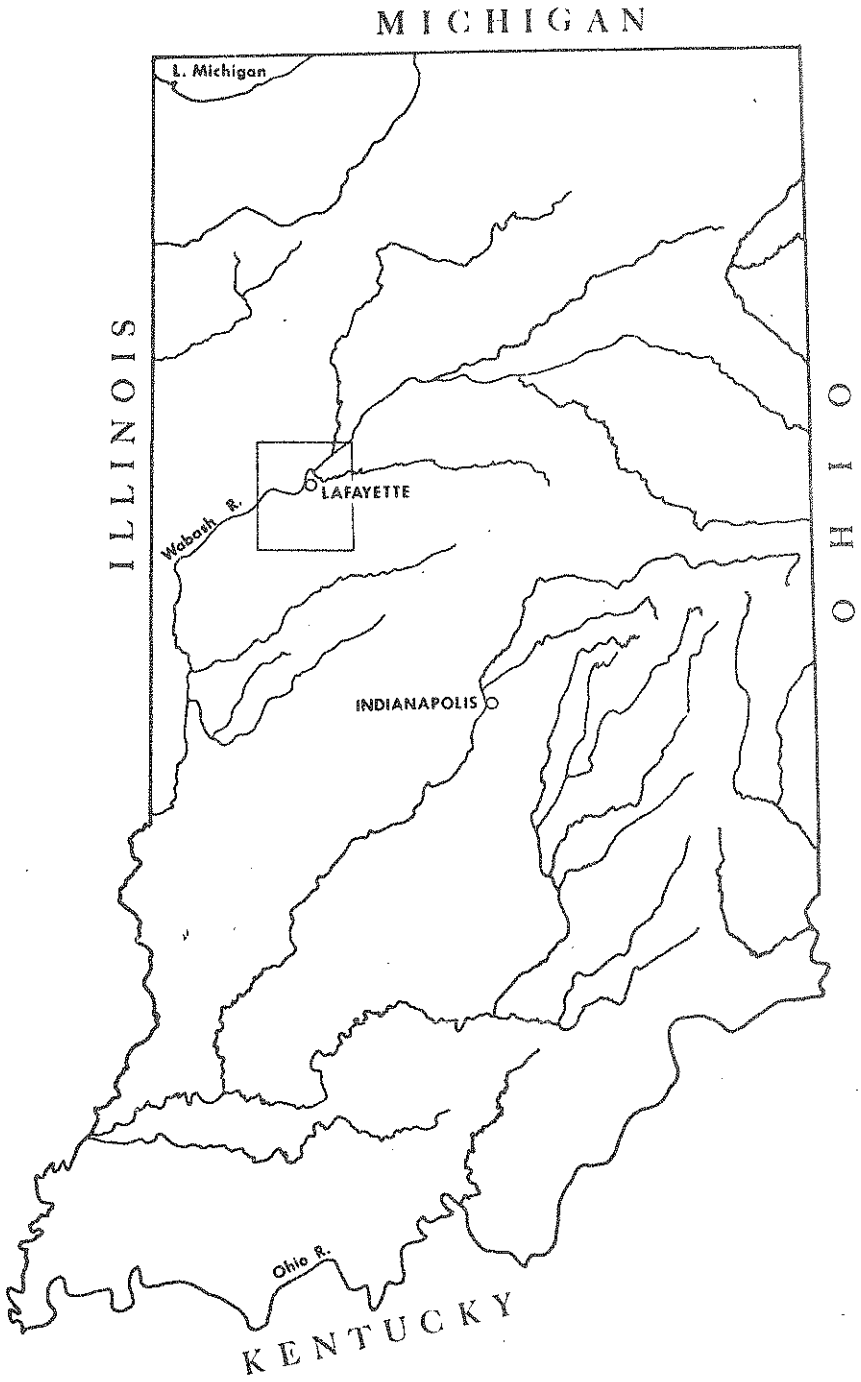


Figure 1. Location of study area

is used for agricultural purposes. Principal crops are corn, soybeans, wheat, oats, and hay. The manufacturing of aluminum, chemicals, electronics, plastics, housing, and food stuffs and extraction of sand and gravel constitute industrial production in the area. Purdue University, with approximately 30,000 students provides important contributions to the economy of the county (Maarouf and Melhorn, 1975).

Physiography

Tippecanoe County lies in the Tipton Till Plain of Indiana, a portion of the Tills Plains subprovince of the U.S. Central Lowlands physiographic province (Malott, 1922).

A major portion of the surface of the county consists of relatively flat ground moraine (Plate 1) assigned to the Cartersburg Till Member of the Trafalgar Formation. These deposits belong to the early Woodfordian Substage of the Wisconsinan Stage within the Pleistocene Epoch (Wayne, 1963). Kettles, commonly containing marshes and ephemeral ponds, abound on the flat areas of ground moraine.

The southwestern quarter of the county contains the northwest-southeast trending Crawfordsville Moraine (Plate 1). This feature was probably deposited by the Erie Glacial Lobe during late Woodfordian time (Bleuer, 1974). Numerous kames and kettles and a gently undulating surface characterize the Crawfordsville Moraine. Small lakes once occupied many of the closed depressions that are found on the moraine. These lakes have been drained by post-glacial integration of the local drainage network.

East of the Crawfordsville Moraine, in the south-central portion of the county, numerous linear, esker-like ridges occur. Notable examples are the Raub Esker near South Raub and the Romney Esker near the town of Romney. These ridges are composed of waterlaid, stratified sands and gravels. Peculiarly, the ridges are oriented approximately in an orthogonal pattern; one ridge set trends northeast, the other northwest. Associated with the Raub Esker is the Raub Esker Trough (Leverett and Taylor, 1915) which may be a subice meltwater channel (rinnentäler). Some eskers are found in the north-central portion of the county. These features have historically been valuable sources of sand and gravel.

Kames are ubiquitous local knobs in the southwestern, east-central, and north-central parts of the county. Shawnee Mound, in the southwestern portion of the county, and The Mound, in east-central Tippecanoe County are notable examples. These features have also been important sources of sand and gravel.

Occupying the central and west-central portions of the county is a broad, flat plain known as the Wea Outwash Plain. This area is characterized by poorly sorted and poorly stratified glacial meltwater deposits. Some kettles and numerous small dunes and eolian sheet sand deposits are present on the Wea Plain and near the Wabash River.

The Wabash River valley is the most prominent physiographic feature in Tippecanoe County. The Wabash River

enters the county at the northeast corner and courses southwestward to exit in the west-central part of the county. Two sets of river terraces are found in the valley. Locally these flat benches are wide and areally extensive, but elsewhere they are absent or very restricted in size. About 130-150 feet above the river is the Shelbyville Terrace. This terrace represents the highest level of valley filling by Wisconsinan outwash. The Maumee Terrace occurs 20-40 feet above the river. It was formed at the time of breaching of the Fort Wayne Moraine at Ft. Wayne, Indiana by Glacial Lake Maumee which resulted in a short-lived torrent of flood waters (Fidler, 1948). The torrent incised the Shelbyville Terrace to the Maumee Terrace level. The present floodplain marks the level of downcutting by the river since the Maumee Flood.

A conspicuous linear depression which contains the barbed drainage of Indian Creek and a tributary of Burnett's Creek is found northwest of Lafayette. Hadley Lake and several other smaller natural ponds are located in this depression. This depression may be a former glacial meltwater sluiceway in which later stream capture has isolated Hadley Lake; or, the depression may be remains of a rinnentäler (Johansen and Melhorn, 1970).

North of the Hadley Lake lineament, there is a small patch of ridge moraine. This area resembled the Crawfordsville moraine in surface morphology, having kames, kettles,

and rolling hills. However, any genetic correlation with nearby moraines is uncertain.

The highest point in Tippecanoe County, located in the southwestern portion, is 840 feet above mean sea level. The lowest point is 495 feet, located where the Wabash River exits the county. Maximum local relief is 220 feet, just northeast of West Lafayette along the river bluffs.

PHILOSOPHICAL FRAMEWORK OF STUDY

Aesthetically, a landscape may be considered as a "... complex of configurations and life forms distributed in space, with color, movement, noise and odor variably modifying the images sensed by the perceiver ..." (Sonnenfeld, 1966, p. 73). It is the elusive nature of the interaction between the viewer, with personal biases and preferences, and the environment that produces an aesthetic experience which obstructs the development of an objective method of scenic evaluation. Thus the evaluation of scenic resources as part of land use planning or assessing environmental impact has historically depended upon subjective methodologies.

Figure 2 depicts how an objective scenic evaluation may be formulated, beginning with the recognition of scenery as a natural resource. The specific operational framework within which this investigation has been conducted is as follows:

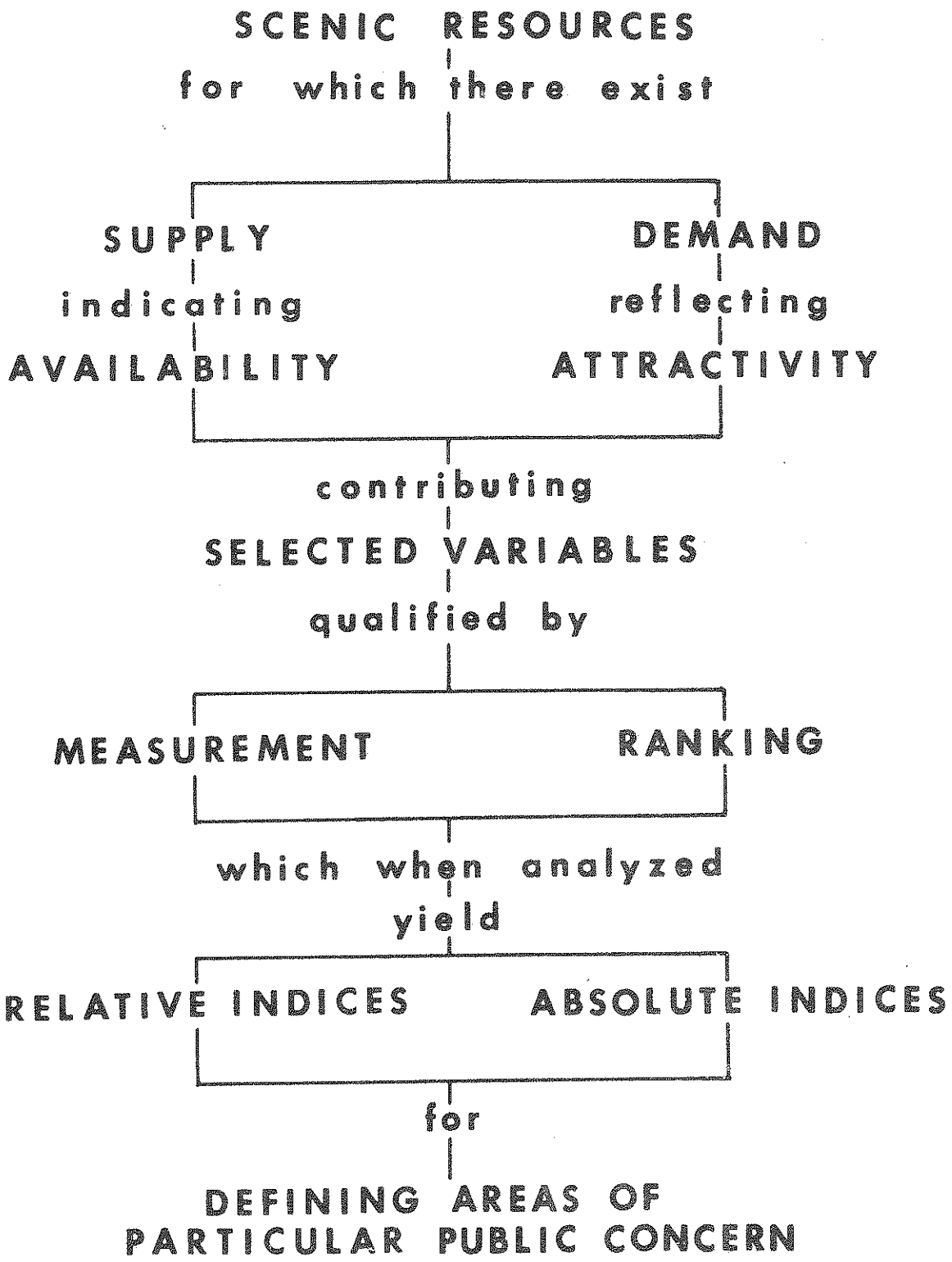


Figure 2. Flow diagram illustrating how an objective method of evaluating scenic resources might proceed (from Keller, 1976).

1. Identification of environmental elements that control scenic quality, and which can be evaluated with a minimum amount of subjectivity.

2. Definition of environmental entities that enhance scenic quality, and entities which inherently are contrary to scenic beauty of landscapes.

3. Comparison of landscapes with different physical, cultural, and biologic characteristics in order to identify those landscapes which are commonplace and those landscapes that are unique with respect to the scenic elements under consideration.

4. Definition and utilization of relative aesthetic indices, to hierarchially rank landscapes by scenic value based on analyses of the environmental elements which control scenic beauty.

A scientific study must be based on a series of logical assumptions and philosophic concepts pertinent to the system being investigated. The following concepts serve as the philosophical basis of this investigation into scenic aspects of landscapes:

1) Scenery is a natural resource that can be developed, managed and conserved for present and future use by rational, objective planning.

2) Scenic resources are continuous across the surface of the land.

3) Like soils, scenic resources vary in quality from place to place.

4) Scenic resources are visual amenities that can be evaluated in terms of an aesthetic judgement based on the perception of tangible and intangible elements of the environment.

5) Physical, biologic and cultural characteristics collectively control scenic quality of landscapes.

6) Landscapes with unique physical, cultural and biologic characteristics are more significant to society as scenic resources than everyday or common landscapes.

7) Topographic relief, presence and abundance of surface water, and diversity of surface form are the most aesthetically pertinent physical aspects of the landscape.

8) Naturalness, distribution and diversity of floral communities are the most important biologic aspects of landscape scenery.

9) Man's contribution to scenic quality in the landscape is manifested in his utilization of the land.

10) Personal judgements of aesthetically displeasing aspects of the environment are more universally consistent than are judgements about beauty in the environment.

THE AESTHETIC EXPERIENCE

Personal appreciation and evaluation of beauty in the environment involves the sensory collection of information pertaining to aesthetic elements and the synthesis of this information with past experiences, values, and preferences to produce a particular emotional response. All five senses provide input which collectively add to the appreciation of scenic beauty. The scent of wildflowers in bloom, the sound of gurgling and bubbling of a winding brook, and the feel of a cool breeze on a hot day enhance the aesthetic experience. Important visual factors of the aesthetic experience are the arrangement and spatial relationships of lines, masses, light and colors (Morisawa, 1970; Fish, 1972; Helson, 1964; and Sonnenfeld, 1966).

Attempts to understand the essence of beauty by philosophers and psychologists have given prominence to the elements of variety, complexity and unity. The emotional

effect that a variety of environmental stimuli has upon aesthetic judgements is the basis of the psychological theory of adaption levels. Adaption Level Theory maintains that an individual's values, judgements and preferences of physical, aesthetic and symbolic objects are controlled by modes of adaption to environmental stimuli. For any specified range of stimuli variation an individual establishes an "adaption level" which determines his other aesthetic response to any stimulus in that dimension. We become desensitized to everyday or commonplace stimuli from the environment, which causes us to be more sensitive to stimuli that vary from the commonplace. As illustrated in Figure 3, stimuli that deviate from an adaption level (AL) are evaluated positively by an individual within a certain range. Beyond this range, an individual's response to highly alien stimuli becomes increasingly negative. Within a particular culture, adaption levels of different individuals are very similar, although major variations can occur (Helson, 1964; Wohlwill, 1968; Berlyne, 1960; and Sonnenfeld, 1966).

Complexity arouses positive aesthetic response through conflict between opposing lines, forms, colors and textures (Berlyne, 1960). Complexity alone, however, does not insure positive response to aesthetic stimuli. Increasing stimulus complexity increases positive aesthetic reaction to the environment up to some point beyond which an individual's response to that stimulus becomes increasingly negative.

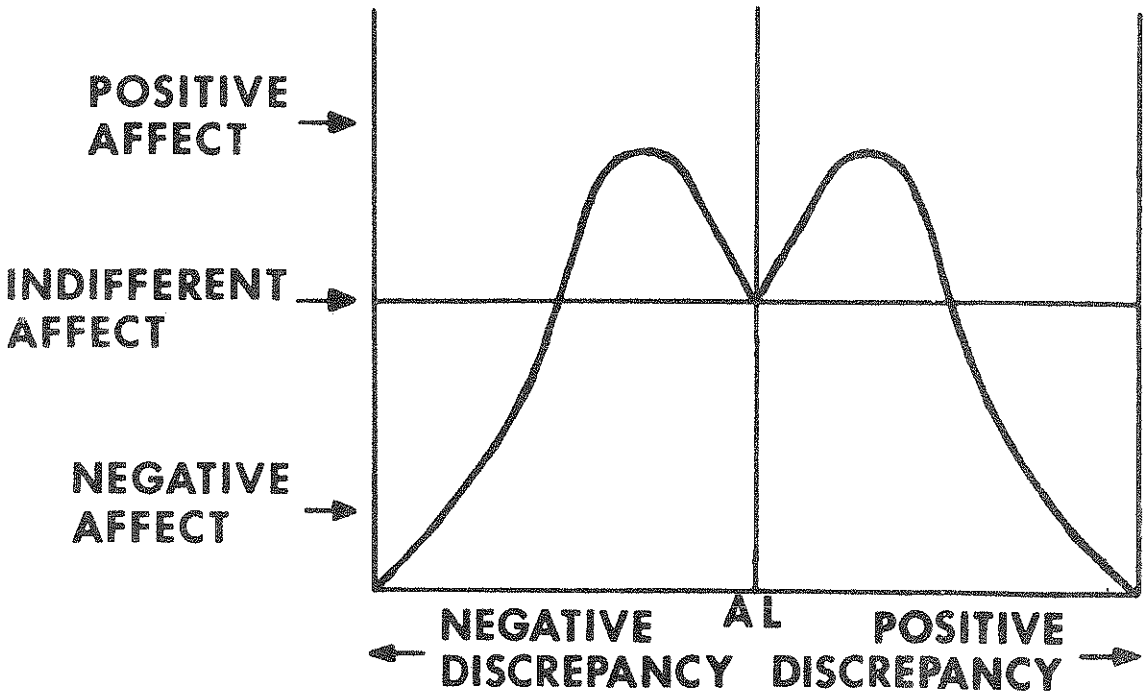


Figure 3. The McClelland-Clark "discrepancy-from-level" theory of effect: small variations from level are pleasant; large variations are unpleasant (from Helson, 1963).

This phenomenon is probably due to indifferent and negative reactions to overwhelming amounts of sensory information which one is unable to process and synthesize (Wohlwill, 1968). In order to create an enduring, positive aesthetic experience both complexity and unity must co-exist in some appropriate proportion. Unity is the quality which joins all the elements of the landscape into a single, harmonious entity and, therefore, moderates complexity by the fusion of lines, forms, colors, and textures (Berlyne, 1960; Litton, 1977). An agricultural landscape is a very complex array of different fields, crops, trees, fences, soils and buildings. But this complexity is unified by the geometric arrangement of the fields and fences, the parallel rows of crops and the patterns of vegetation. Complexity without unity is exemplified by the industrial landscape with an infinite variety of structures, roads, buildings, pipes and colors that seem to be an amalgamation of individual entities.

SCENIC FACTORS OF LANDSCAPES

Factors of the landscape which affect one's perception of scenic beauty are distance, observer position, sequence, form, spatial definition and light. Distance, observer position and sequence are concerned with the relationship between viewer and environment. Form, spatial definition

and light are elements of the physical environment (Litton, 1968).

Consideration of distance as an aesthetic element is based on the concept that an optimum proportion exists between the scale of the landscape and the distance of any particular segment of the landscape from the observer. From any viewing position the landscape can be divided into foreground, middleground and background areas. Maximum perception of detail occurs in the foreground, where textures of bark on a tree or individual blades of grass are perceived by the viewer. In the middleground areas, which serve to unify all segments of the landscape, perception of overall patterns and textures occurs. Single peaks merge into ridges and trees become forests in middleground areas. In the background, details and minutiae converge into simple forms and lines. Here, ridges are transformed into mountain ranges and forests become shadows and silhouettes.

Sequential experiences and perceptions are very important to the appreciation of scenery. Landscapes are rarely, if ever, static. Objects are constantly moving in our environment. Varying atmospheric conditions and changing light conditions give an ephemeral kineticism to the landscape. Over a longer term, seasonal variations completely alter the scenic character of the countryside. And, over an even longer period, there is a structural change in the environment brought about by human activities or natural processes.

Another aspect of the sequential aesthetic experience is the motion of the observer which results in a constantly changing view of the countryside (Fines, 1968; Litton, 1968).

Observer position refers to the location of the viewer with respect to the primary visual objective. This position may be above, below or at the same level with the objective. The position of the viewer controls the closure of the landscape and the distance of view (Litton, 1968).

Form refers to the three-dimensional, convex topographic features of the landscape. Contrast is the most important aspect of form and may result from size, isolation or surface variation of a particular feature. Spatial definition in the landscape is controlled by three-dimensional, concave topographic features which tend to delimit space into discrete parcels. Spatial definition varies with the proportion of valley wall height to floor expanse, the nature of the enclosing walls and floor, the configuration of the floor as it meets the wall, and the absolute size of the feature. Aesthetically, spatial definition and form control the scale of the landscape with respect to the viewer and, therefore, the total number of scenic elements that can be perceived (Fines, 1968; Litton, 1968).

Color and intensity of light greatly affect the scenic qualities of a landscape. Hue of color is most important aesthetically; however, it is the color value which gives a feature distinctiveness and contributes most of the contrast

between scenic elements. Light intensity and color vary greatly with differing atmospheric conditions and seasons (Litton, 1968). Other investigators have pointed to the importance of vista, serenity, naturalness (Morisawa, 1971), sentiment, fear, curiosity, surprise (Fines, 1968) or vividness (Litton, 1977) as intangible controls of scenic quality.

Because scenic resources must be objectively evaluated for planning and management, subjective judgements and decisions pertaining to the quality of scenery must be minimized. With this in mind, we have attempted to identify those scenic elements of the environment that can be measured, from available data sources, with minimal subjective judgements. Intangible aesthetic entities, such as color, or scenic elements which are difficult to measure and evaluate, such as textures or patterns, have been omitted from this evaluation method to preserve a maximum amount of objectivity. Previous investigators have demonstrated that components of the environment which control scenic quality can be grouped into physical, biologic or cultural categories (Leopold, 1969; Melhorn et al., 1974) and these primary categories are utilized in this study.

Physical scenic factors are those components of the landscape which determine its geomorphic character and expression. Topographic characterization and surface water characterization are the most aesthetically pertinent aspects of the physical landscapes (Linton, 1968; Fines, 1968; Leopold,

1969; Morisawa, 1971; Melhorn et al., 1974; Zube, 1973; Keller and Bedford, 1974; and Litton, 1977a). The topographic nature of a landscape is controlled by the type, magnitude, frequency and distribution of landforms. As the landscape becomes steeper, more complex and diverse, and has greater relief, scenic quality increases (Linton, 1968; Zube, 1973; Fines, 1968; Morisawa, 1971; Keller and Bedford, 1974). Tangible landscape parameters which are germane to these topographic aesthetic criteria are: 1) landform type; 2) landform diversity and distribution; 3) relief, both total relief over a large area and local relief in a more restricted area; 4) ground slope; and 5) contour frequency (a measure of the undulatory nature of a surface). Several investigators (Linton, 1968; Morisawa, 1971; and Litton, 1968) have stressed the importance of panorama (the extent of view over a wide area) as an aesthetic control. Unrestricted panoramas may be more pleasing than obstructed or limited views. Kiemstedt (1967) has shown that the presence of many abrupt, unbroken discontinuities, such as between a cliff face and a valley floor, enhance the scenic quality of landscape.

One of the most important physical elements of landscape aesthetics is the presence and abundance of surface water. In fact, most recent studies of scenic resources have concentrated on surface water and particularly the riverine environment (Leopold, 1969; Morisawa, 1971;

Kuska et al., 1974; Melhorn et al., 1974; Michalson, 1974; and Knudson et al., 1974). These workers and others (Linton, 1968; Fines, 1968; Litton, 1968; Litton, 1974; Keller and Bedford, 1974; Keller, 1976; and Litton, 1977a) have concluded that scenic quality in a landscape increases as the abundance and diversity of surface water increases (Photo 1). Surface water characteristics of landscapes that are most pertinent to these scenic standards are: 1) drainage density, 2) drainage frequency, 3) drainage order, 4) drainage pattern, 5) drainage texture, 6) number and size of lakes, and 7) number and size of swamps.

Biologic factors of landscape aesthetics include the elements of floral communities which may produce visual amenities. Previous studies have stressed naturalness of floral communities as the prime consideration in determining their scenic value (Morisawa and Murie, 1970; Boster and Daniel, 1972; and Knudson, 1973). The determination of the degree of naturalness in floral communities involves a complex study of species abundance and species associations. For this study the evaluation of naturalness is limited to the observation of the amount of area covered with indigenous vegetation in a particular landscape. Fish (1972) and Morisawa and Murie (1970) assert that variety or diversity, along with the spatial distribution of vegetation types, are very important factors to consider in the aesthetic evaluation of floral communities. The presence of ornamental,

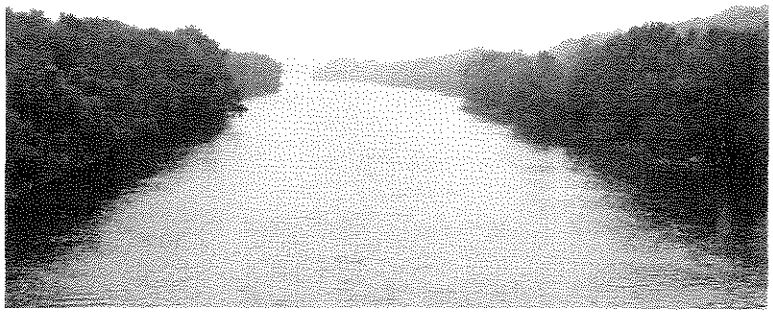


Photo 1. Wabash River. The presence and abundance of surface water greatly enhances scenic quality. Flat valley floors contrast dramatically with steep, high relief valley walls. Indigenous floral and faunal communities thrive along the river. (Near Hwy 52)

unusual, endangered or relic floral genera may enhance the visual affect of a landscape (Leopold, 1969, 1971; Morisawa and Murie, 1970; Knudson et al., 1973; and Melhorn et al., 1974).

A very important element of the scenic landscape is naturalism (Zube, 1973; Morisawa, 1971; Boster and Daniel, 1972; Keller and Bedford, 1974). To be natural is to be "... present in or produced by nature; not artificial or manmade..", so naturalness depends upon the extent and degree that a landscape has been altered by man. A tentative assumption is that scenic quality increases as the amount of area in natural surface increases and as the diversity of natural surface types increases (Keller and Bedford, 1974; Morisawa, 1970; Boster and Daniel, 1972). But, pragmatically, naturalism is a very difficult entity to define and evaluate. Which elements of the landscape are natural and which are unnatural? Can we find a "natural" landscape that is totally unaffected by human existence? Is man unnatural?

The impact of human activities on scenic quality of landscapes may be evaluated by consideration of land use patterns and practices (Fines, 1968; Litton, 1968; Linton, 1968; Zube, 1973; Keller and Bedford, 1974; and Litton, 1977b). Previous researchers do not completely agree upon the effect--positive, negative or neutral-- that various land use practices have on beauty in the landscape. Linton (1968, p. 229) has stated:

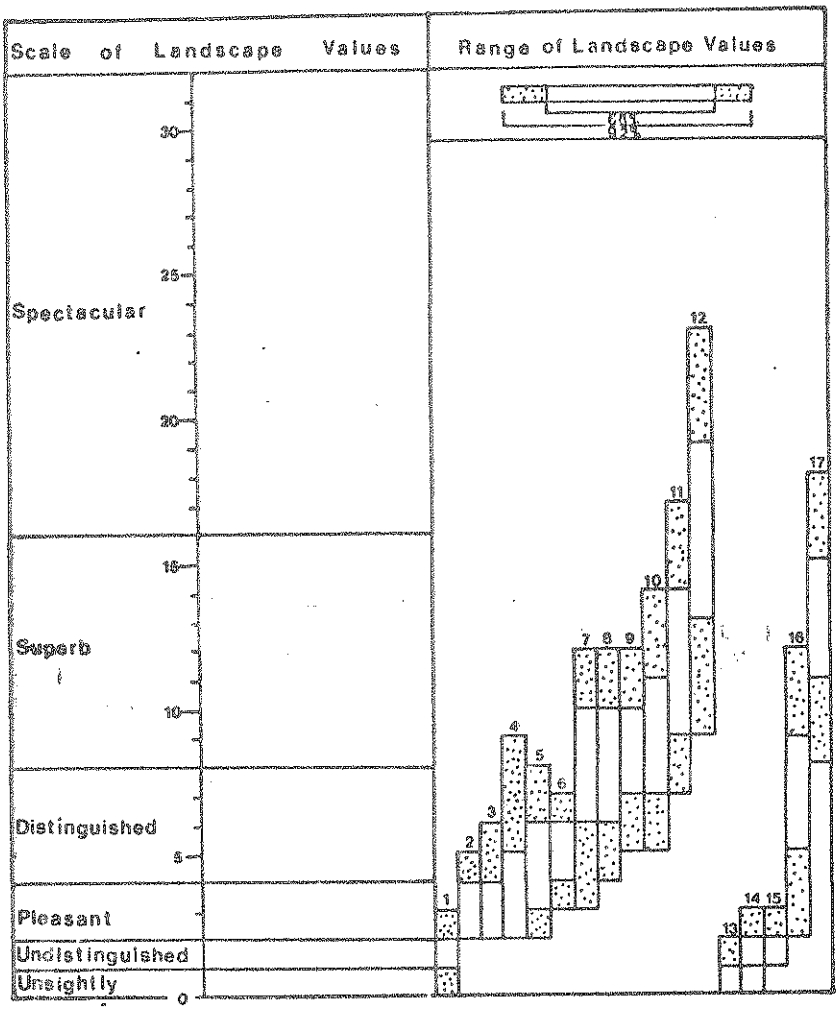
> "It is through his utilization of the land that man makes his contribution to scenery, where that contribution is not apparent we describe the landscape by such adjectives as wild, lonely or desolate. Where he has laid his hand heavily on the landscape as in the urbanized or industrialized areas the result, by and large, is commonly ugly, dull or depressing. Elsewhere his handiwork may add rather than detract from the qualities of the natural landscape. At its best the farming landscape - which is surely man's chief artifact - may be a work of art".

Keller and Bedford (1974, p. 16) assert "... as the amount of an area covered by man-made features increases, scenic quality decreases. Agricultural land can be considered neutral" (Photo 2). Other investigators have demonstrated that historical or archeological features may add greatly to scenic quality (Leopold, 1969; Melhorn et al., 1974; Fines, 1968; Litton, 1977a). Fines (1968, p. 42) maintains that:

> "Veneration of age and history can endow manmade structures with greater beauty or permit the acceptance in the landscape of structures which would otherwise be regarded as intrusive. There is a similarity of form between a tower windmill and a tower silo, but it may take another hundred years for the latter to be widely accepted."

Fines (1968) developed a scale of "Landscape" and "Townscape" scenic values to be used in a regional planning study of East Sussex County, England. This study utilized a set of photographs of different landscapes and urban areas which respondents were asked to evaluate on a scale of overall beauty. The scale is shown in Figure 4. Photographs of commercial, industrial, suburban and slum areas were perceived as being least scenic. But towns of archeological or historical interest and "classic towns",

Photo 2. Agricultural land use. Human activities often disrupt scenic resources but agricultural activities may augment scenic quality.



Lowland Landscape Types
1. Countryside spoiled by excessive cluster.
2. Flat unrelieved plains (prairie, steppe, desert and tundra).
3. Flat or gently undulating "humanized" countryside.
4. Woods and forests.
5. Coastal marshes, creeks, dunes.
6. Flat or gently undulating heaths and commons.
7. Landscaped parks.
8. Low hills (downs, wooded hills).
9. Coastal cliffs.

Highland Landscape Types
10. High hills and moors.
11. Lower mountains (e.g. Britain).
12. Great mountains, canyons, waterfalls.

Townscape Types
13. Slums and derelict areas.
14. Modern industrial and commercial areas.
15. Modern suburbia.
16. Towns of architectural and historic interest.
17. Classic towns (e.g. Florence, Venice, Edinburgh).

Figure 4. Scenic scale of landscape types (from Fines, 1968).

such as Venice, were thought to be exceeded in beauty only by mountainous areas. It is interesting to note that, among "Landscapes", areas of high relief or water-dominated landscapes were perceived as highly scenic, relative to low relief prairies and plains or forests.

We can usually agree on what constitutes ugliness in our environment, although obtaining unanimity in opinion about elements of beauty may be difficult. Most ugly entities in the landscape are misfits which are easily recognized. A junk auto in an industrial area does not seem badly out of place; but place that same auto in a wilderness stream and it becomes a misfit which detracts greatly from scenic quality. Garbage in a downtown area is hardly noticed, but becomes an extreme eyesore on a hiking trail. Kates (1966, p. 24) maintains, "... we should not seek to measure beauty but rather ugliness." Misfits are cultural eyesores which are antithetical to scenic beauty. Dilapidated buildings, polluted air, junk-yards, garbage dumps and abandoned quarries are some examples of misfits, but the list is endless (Photo 3).

Based on the aforementioned studies, it can be assumed that agricultural and forest land uses are neutral or positive aesthetic elements of the cultural environment. Industrial, commercial and residential land use practices are normally antithetical to scenic beauty. It is extremely difficult to hierarchially rank land use practices on an absolute scale of aesthetic quality owing to a lack of pertinent

Photo 3. Easily recognized "misfits" such as these junk cars detract greatly from scenery.

research. For this reason, in this investigation we stress the importance of the easily identified misfit, which is invariably a negative aesthetic entity.

UNIQUENESS

Our national parks were set aside by law for preservation because they possess very unusual environmental characteristics. A major portion of the appeal which these areas have for thousands of visitors each year is visual. The views of El Capitan in Yosemite Valley or Grand Teton in Teton National Park are not duplicated exactly anywhere in the world - they are unique.

In evaluating the scenic resources of rivers Leopold (1969) and Melhorn et al (1974) utilized the concept that a landscape that is unique, either in a positive or negative sense, is more aesthetically significant to society than an everyday or commonplace landscape. A landscape may be unique in characteristics which enhance scenic beauty or characteristics which detract from scenic quality. The initial evaluation of a landscape, with its particular suite of environmental characteristics, requires a comparison with different landscapes in order to determine a "relative" uniqueness. Landscapes determined to be "highly unique" must then be analyzed to determine why they are unique. This is accomplished by identifying and defining physical, biological, or cultural factors which are antithetical to the aesthetic quality of the landscape. For example, if

one defines an "Aesthetic Landscape" as one of high relief, abundant surface water, and with no industrial development, then a landscape which is flat, waterless, and contains heavy industry will be ranked low as an Aesthetic Landscape. This landscape may be unique, but the qualities which cause it to be unique are inconsistent with the definition of an Aesthetic Landscape. These concepts serve as the basis of the numerical evaluation method used in this assessment of scenic resources (Melhorn et al., 1974).

GENERAL METHODOLOGY

Fifty landscapes were delineated in Tippecanoe County (Fig. 5). These landscapes were mapped on the basis of surface morphology and cultural use of land. Areas of similar relief, landform characterization, elevation, and land use constitute discrete landscapes. Landscape mapping was accomplished by analyzing U.S.G.S. 7½-minute and 15-minute topographic maps, low altitude black and white air photos (scale 1:20,000), and high altitude NASA color infrared photography (scale 1:100,000).

Physical, biological and cultural elements of landscapes pertinent to scenic assessment are shown in Table 1. "Evaluation categories" were assigned to all "descriptive factors" in each landscape. The total range of each evaluation category was established by observation of the maximum variation of each descriptive factor in the study area. The range of any individual evaluation category was

DESCRIPTIVE CATEGORY	EVALUATION CATEGORY				
Physical Factors	(1)	(2)	(3)	(4)	(5)
1) Convex landforms	Abundant low relief hills	Isolated low relief hills	Abundant high relief hills	Isolated high relief hills	Insignificant
2) Concave landforms	Abundant shallow valleys	Isolated shallow valleys	Abundant deep valleys	Isolated deep valleys	"
3) Dominant landform type	Ground moraine	Ridge moraine	Outwash plain	Floodplain	Complex
4) Landform diversity	Simple (1)	Moderately simple (2)		Moderately complex (3)	Complex > (3)
5) Landform Distribution	Concentrated in 1 area	Concentrated in scattered areas		Partially disseminated	Equally disseminated
6) Landscape discontinuities	Many sharp	Few sharp	Many gradual	Few gradual	
7) Floodplain development	Narrow	Moderately narrow		Moderately wide	Wide
8) Total relief	0-65	66-95	96-135	136-190	> 190
9) Local relief	20	20-35	36-60	61-85	> 85
10) Ground slope	0-2	2.1-6	6.1-11	11.1-14	> 14
11) Contour frequency	7	7-12	13-20	21-29	> 29
12) Panorama	completely unobstructed	predominantly unobstructed	Median	predominantly obstructed	completely obstructed
13) Drainage density	0-4.5	4.6-7	7.1-9	9.1-13	> 13
14) Drainage frequency	20	21-30	31-38	39-45	> 45
15) Drainage order	2	3	4	5	> 5
16) Drainage pattern	dendritic	trellis	parallel	deranged	complex
17) Drainage texture	fine	moderately fine	medium	moderately coarse	coarse
18) Number of lakes	0-1	2-3	4-5	6-9	> 9
19) Lake distribution	Concentrated in 1 area	Concentrated in scattered areas	None	Partially disseminated	Equally disseminated
20) Number of swamps, bogs	0-1	2	3	4	> 4

21) Distribution of swamps, bogs	Concentrated in 1 area	Concentrated in scattered areas	None	Partially disseminated	Equally disseminated
Biological Factors					
22) % area covered with indigenous vegetation	0-10	11-17	18-25	25-45	> 45
23) Dominant floral type community	Grass, shrubs	Occasional patches of trees	Predominantly ornamental	Predominant forests	Occasional trees
24) Floral type diversity	Few		Many		Abundant
25) Ornamental genera	None	Few		Many	Abundant
Cultural Factors Land Use (% total area)					
26) Agricultural	0-50	51-61	62-72	73-89	> 89
27) Residential	0-3	3-4	5-7	8-15	> 15
28) Commercial	0-1	2-3	4-5	6-10	> 10
29) Industrial	1	1-2	3-4	5-7	> 7
30) Forest, Shrubland	0-10	11-17	18-25	25-45	> 45
Other					
31) Misfits	0	1	2	3	> 3
32) Quarries, pits	0	1	2	3	> 3
33) Road, railroads	very infrequent	occasional	frequent	abundant	very dense
34) Building density	"	"	"	"	"
35) Structures	none	"	"	"	very abundant
36) Population density	very sparse	sparse	moderate	dense	very dense
37) Historical, archeological sites	none	1	2	3	> 3

Table 1. Factors of landscape aesthetics.

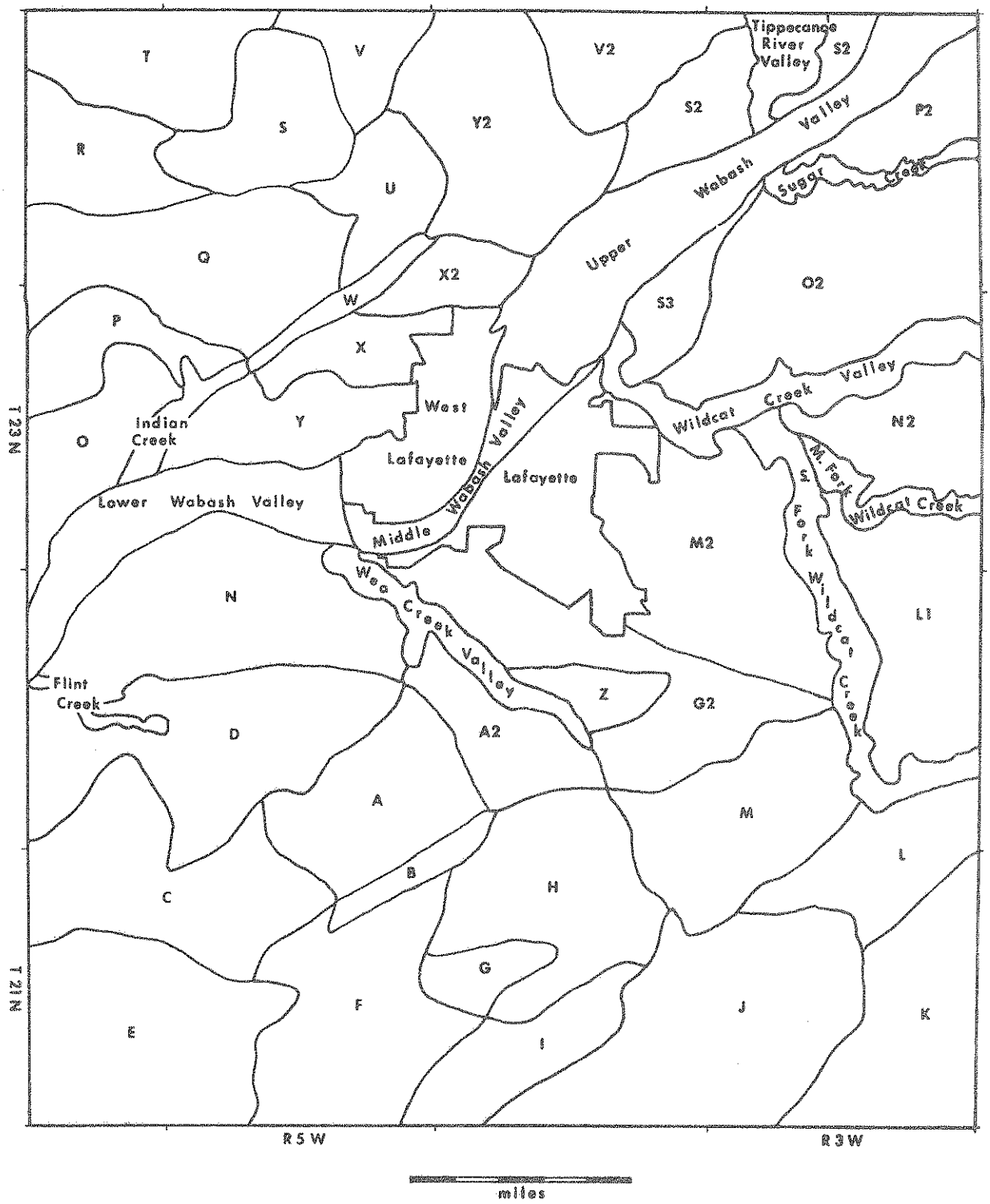


Figure 5. Landscapes aesthetically evaluated in Tippecanoe County.

somewhat arbitrary and with subjective judgement. Descriptive factors and evaluation categories have been "fine-tuned" for use in the Tipton Till Plain. Adjustments in these criteria likely are necessary for application of this technique to different physiographic regions or even other landscapes within the same physiographic province.

Data were compiled by observation in the field and measurement in the laboratory. Data sources for laboratory measurements were U.S.G.S. 7½-minute topographic maps, low altitude black and white air photos (courtesy Prof. R.E. Miles, C.E.), a Tippecanoe County Land Use Map (plate 2, produced by cooperation with D. Scholz, LARS), the Tippecanoe County Drainage Map (Fig. 6, Atlas of Indiana County Drainage Maps, 1959) and the Historical Map of Tippecanoe County (Tippecanoe County Historical Association, 1975). Specific data sources for each descriptive factor analysis are shown in Table 2.

A total of 400 field stations, 8 per landscape, were utilized for field observations. Station locations were randomly chosen on topographic maps before entering the field to circumvent investigator bias and to insure that a major portion of every landscape would be directly observed. To prevent subconscious duplication of analyses between field stations of the same landscape, more than one landscape was evaluated on each field excursion. In this way, the investigator could shift between stations in different landscapes. Also, observational evaluations were concealed after being

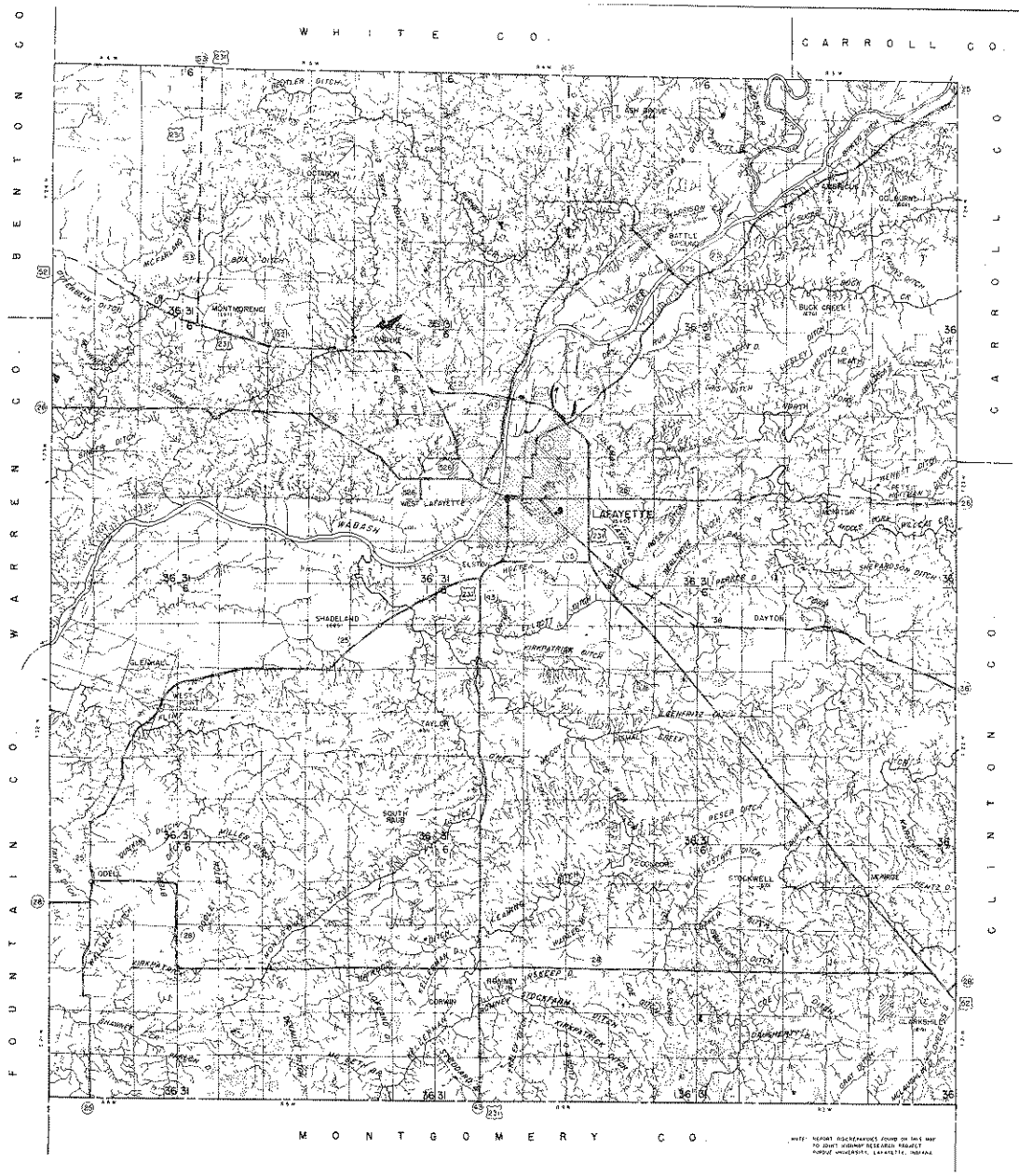

W H I T E C O.
CARROLL CO.
BENTON CO.
WARREN CO.
FOUNTAIN CO.
CLINTON CO.
CARROLL CO.
M O N T G O M E R Y C O.
LAFAYETTE
WEST LAFAYETTE
WABASH
DAYTON
SHADELAND
BUCK CREEK
MONTMORENCI
ODELL
STOCKWELL
CLARKS HILL
DRAINAGE MAP
TIPPECANOE COUNTY
INDIANA
SCALE OF MILES
0 2 4

Figure 6

7½-minute topo. maps	County drainage map	Air photos
total relief	drainage density	dominant landform type
local relief	" frequency	landform diversity
ground slope	" pattern	landform distribution
contour frequency	" texture	number of lakes
drainage order		lake distribution
number of quarries		swamp distribution

Field observation	Tippecanoe County land use map	Historical map of Tippecanoe County
convex landforms	% area in indigenous vegetation	historical, archeological sites
concave landforms	agricultural	
landscape discontinuities	residential	
panorama	industrial	
dominant floral community	forest	
floral diversity		
ornamental flora		
misfits		
roads, railroads		
building density		
structures		
population density		

Table 2. Data sources for the evaluation of factors of landscape aesthetics.

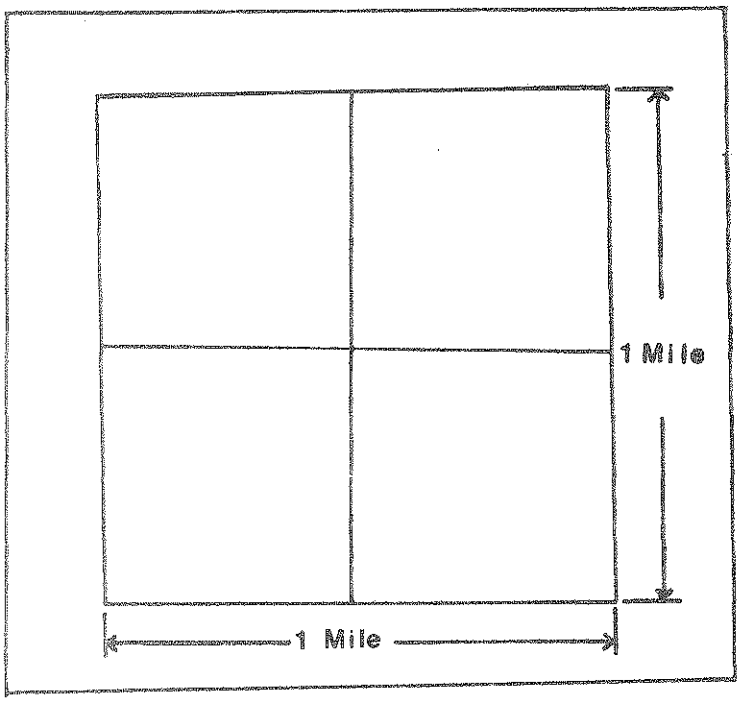
recorded at each field station. Field excursions were limited to four hours to reduce the adverse effect of fatigue on observational assessments.

For accurate characterization, descriptive factors were evaluated in the laboratory at eight different sampling stations within each landscape. These sampling stations were randomly located on the topographic maps, independent of the field stations. Transparent templates (Fig. 7) were used to measure factors requiring areal evaluation, such as drainage density (miles of channel/mile^2), or linear evaluation such as contour frequency (contour lines/mile). An average value of the eight data points was then used to choose the proper evaluation category for each descriptive factor. A more detailed description of measurement methodology and factor definitions follows.

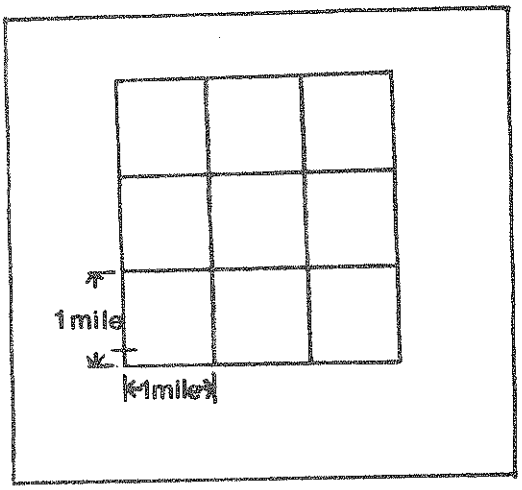
DATA REQUIREMENTS

Physical Factors

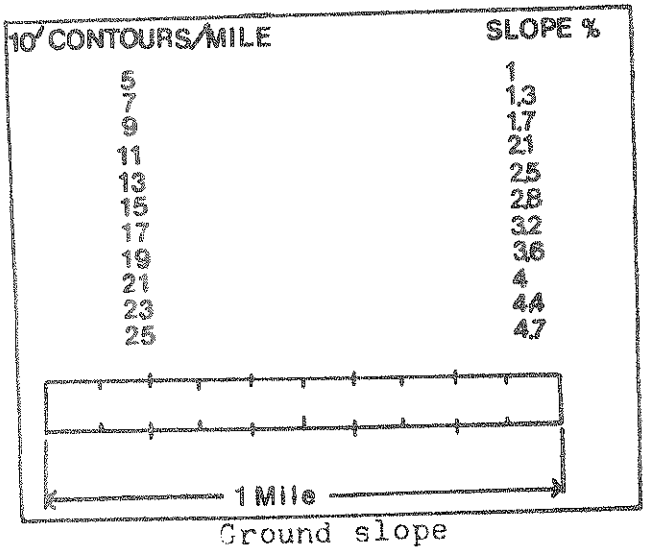
1) Convex landforms - This factor requires an observation and categorization of positive topographic elements of the landscape. Figure 8 illustrates the various evaluation category types of convex landforms.
2) Concave landforms - An observation of the negative topographic elements in the landscape. Evaluation category types are shown in Figure 9.



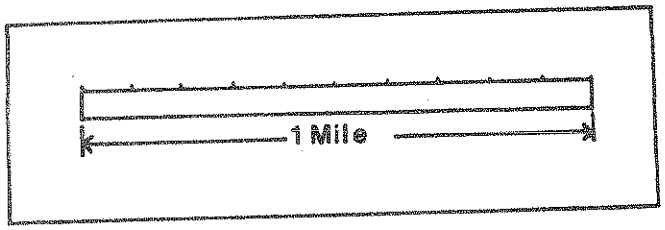
Local relief



Drainage density
Drainage frequency
Drainage texture
Drainage pattern



Ground slope



Contour frequency

Figure 7. Templates used to measure aesthetic factors.

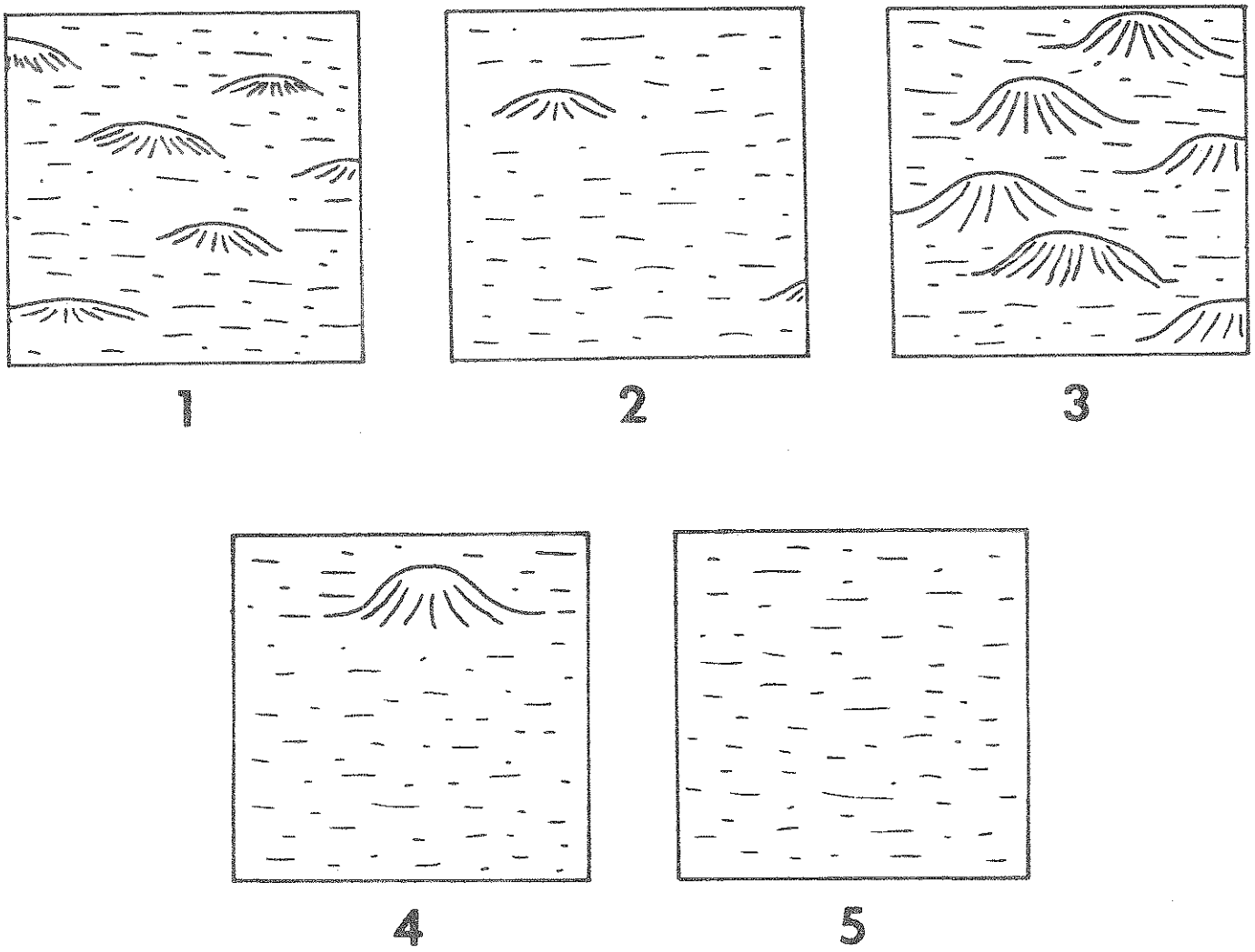


Figure 8. Convex landforms (Numbers refer to evaluation categories in Table 1).

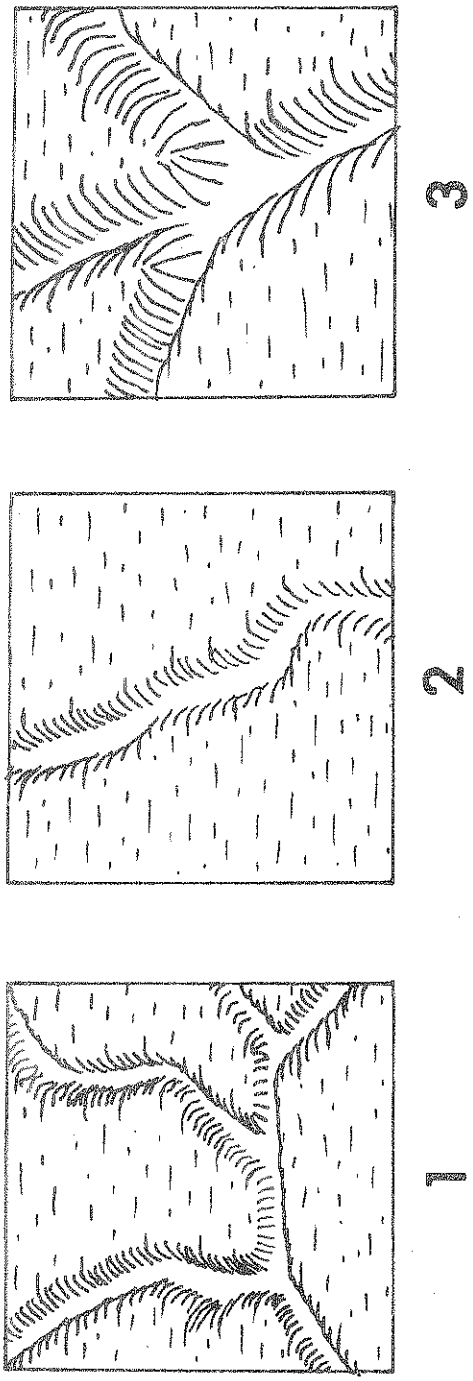


Figure 9. Concave landforms.

3) Dominant landform type - This is an observation of the most prevalent landform in the landscape. Evaluation categories that are utilized are genetic, geomorphic landform classifications.

4) Landform diversity - The number of different landform types in a landscape.

5) Landscape discontinuities - An observation of linear "breaks" in the continuity of the landscape. Sharp discontinuities are expressed as lines, such as the terrace cliffs or sharp ridges in #1 on Figure 10. Gradual discontinuities are linear but more rounded, such as the gentle valley walls in #4 of Figure 10.

6) Floodplain development - The general width of floodplain in the landscape. Valley walls are very close to the stream in narrow floodplains but very distant from the stream in wide floodplains.

7) Landform distribution - This is the areal distribution of landforms in the landscape. Figure 11 depicts the evaluation categories for all distribution analyses in this study.

8) Total relief - The vertical distance between the highest and lowest points of elevation in the landscape under consideration.

9) Local relief - The maximum relief in 1/4 square mile sections in a landscape. A transparent template, shown in Figure 7, divided into 1/4 square mile sections was utilized in this measurement. The template was randomly placed on the topographic maps for measurements.

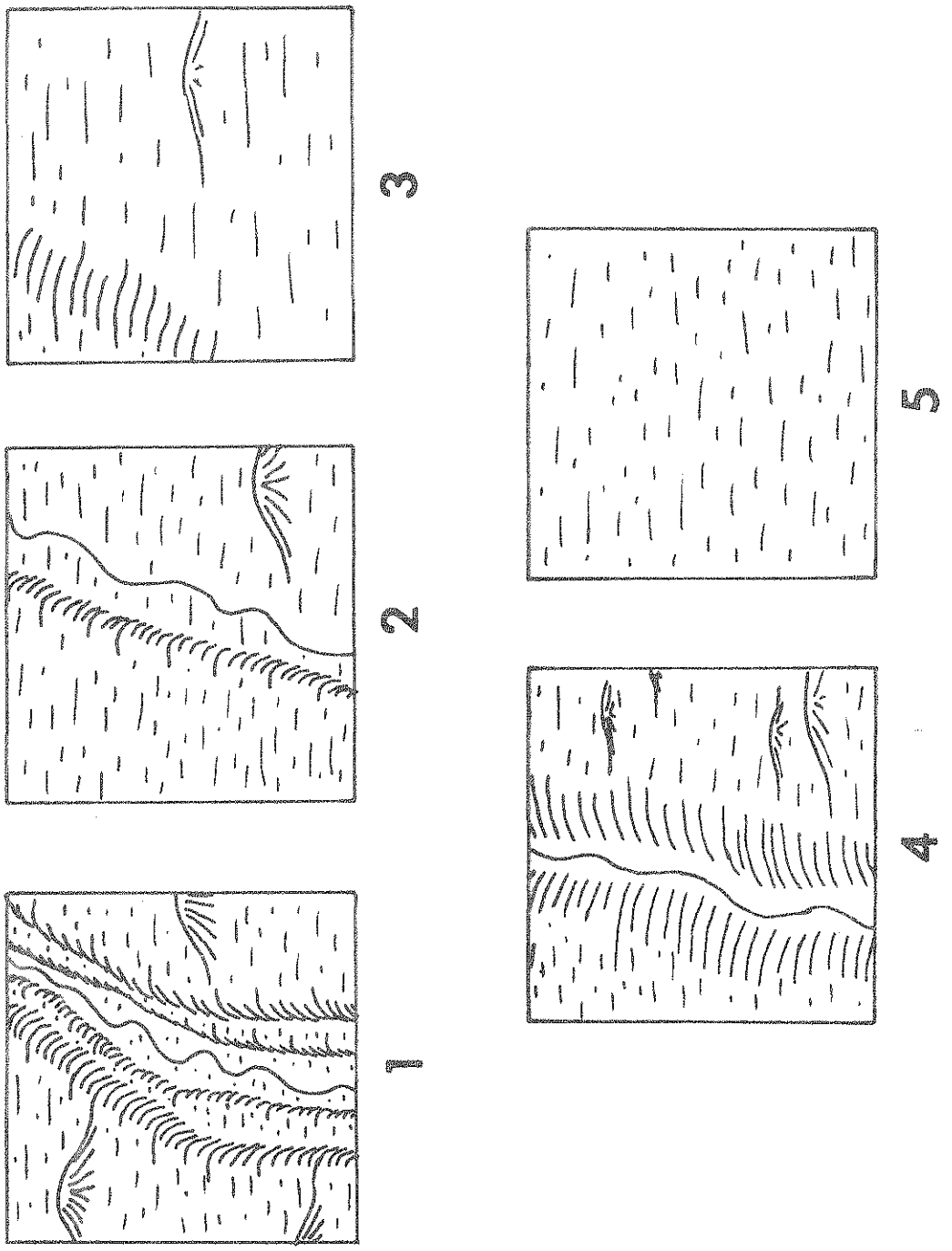


Figure 10. Landscape discontinuities.

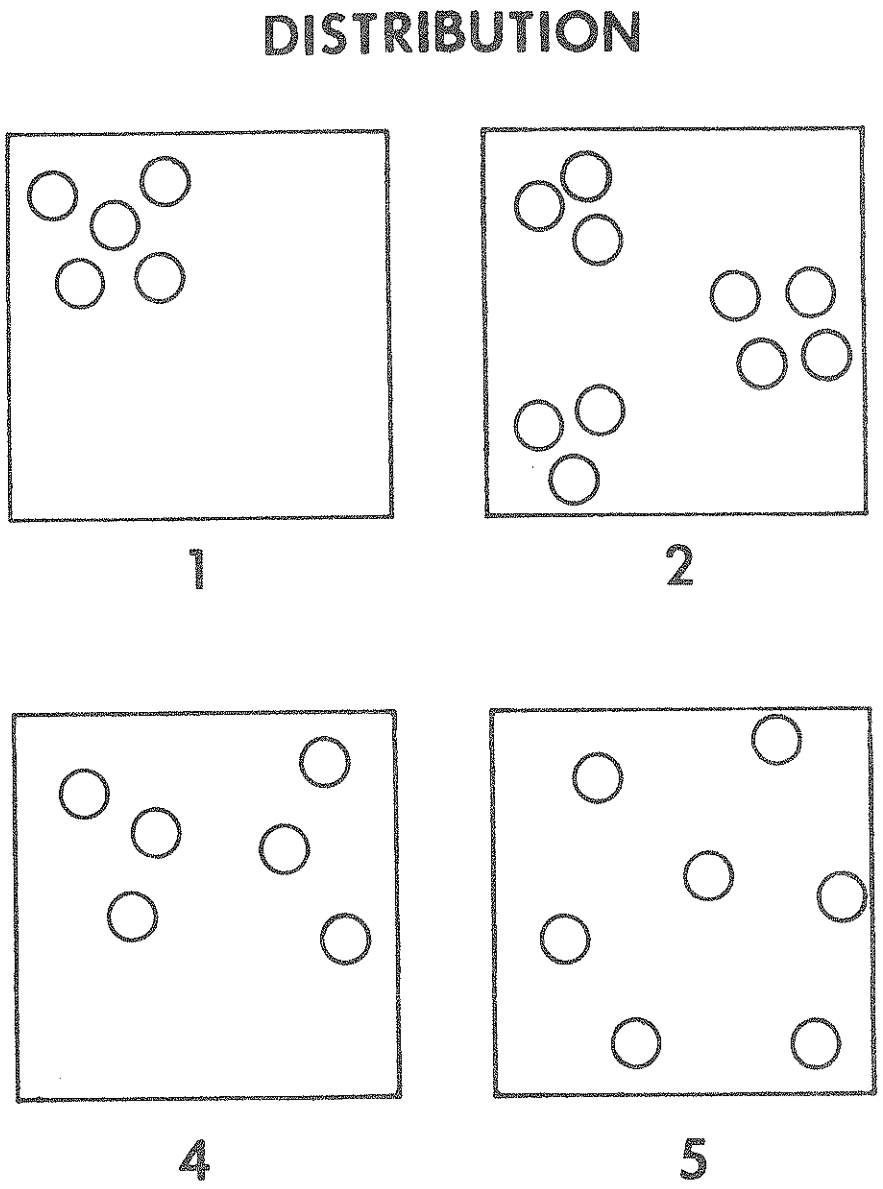


Figure 11. Evaluation categories for distribution analyses. Numbers refer to evaluation categories in Table 1.

10) Ground slope - The ratio of vertical elevation change to horizontal distance (ft/ft x 100) measured orthogonally to contour lines. A template (Fig. 7) was also used in this measurement. It was randomly placed within a landscape for each measurement.

11) Contour frequency - The number of contour lines per mile along a randomly oriented line. This is a measure of the undulatory nature and topographic diversity of the surface. Again, a randomly placed template (Fig. 7) was used in this measurement.

12) Panorama - An evaluation of the ability to see wide expanses of area from a station position. Figure 12 illustrates panoramic evaluation categories.

13) Drainage density - Miles of stream channel per square mile. A template (Fig. 7) divided into one-square mile sections was used for drainage density and drainage frequency measurements. For drainage density, a map measurer was employed to measure the length of channel in each one-square mile section.

14) Drainage frequency - Number of streams per square mile.

15) Drainage Order - Strahler order of the largest stream in the landscape as observed on blue-line 7½ min. topographic sheets.

16) Drainage Pattern - This is an evaluation of the form of the drainage network in a landscape. One-square mile areas were used as data bases; again with a randomly placed template. Standard drainage pattern terminology was utilized in the evaluation categories.

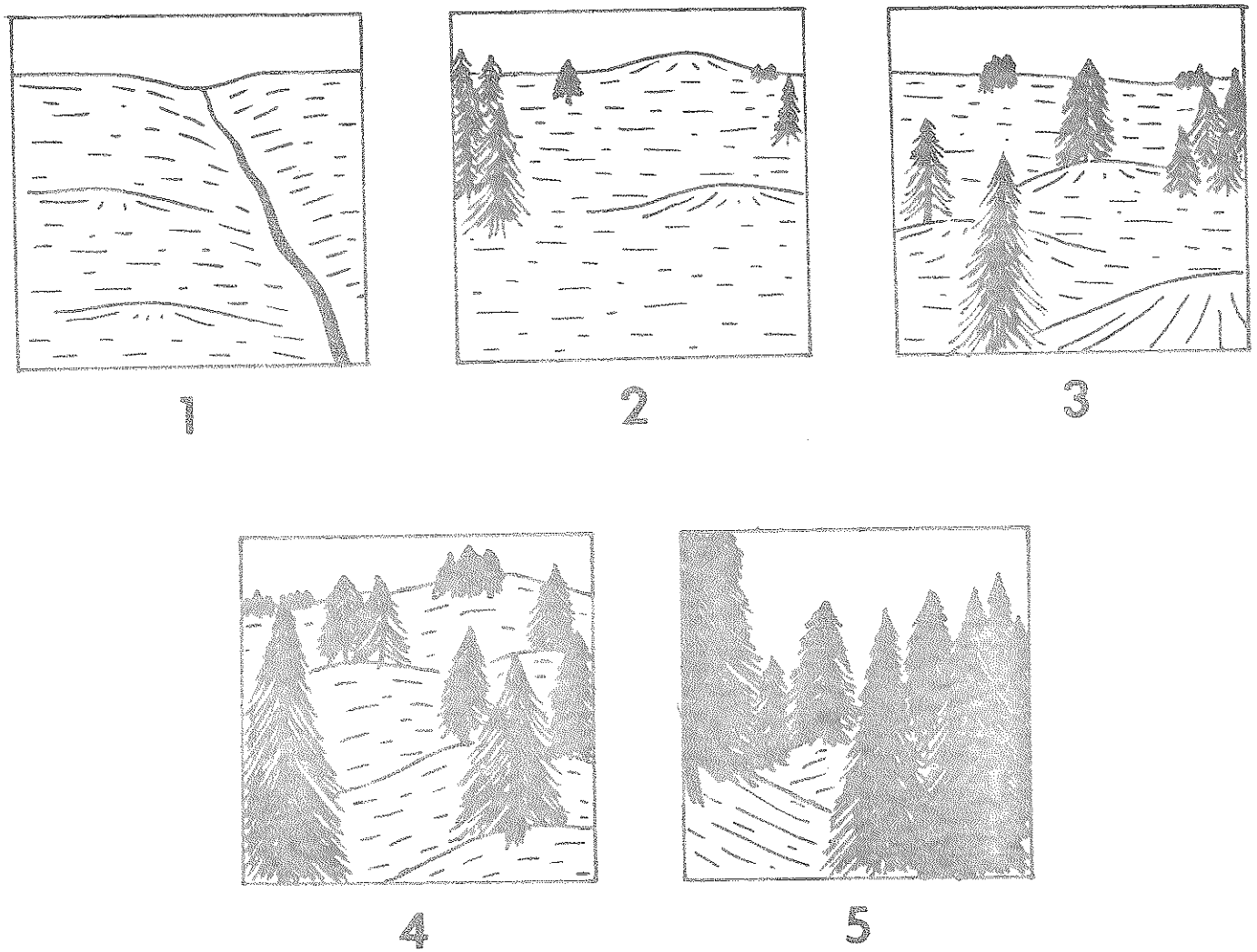


Figure 12. Panorama.

17) Drainage texture - A qualitative assessment of the relative spacing of drainage lines in one-square mile areas. Evaluation category types are illustrated in Figure 13. A template was utilized in this evaluation.

18) Number of lakes - Self explanatory.

19) Lake distribution - Self explanatory (see Fig. 11).

20) Number of swamps, bogs, - Self explanatory.

21) Swamp distribution - Self explanatory (see Fig. 11).

Biological

22) % area in Indigenous Vegetation - This factor refers to the amount of area in a given landscape that is covered with naturally occurring vegetation.

23) Dominant floral type community - An observational evaluation of the most prominent vegetative community present in the landscape being considered.

24) Floral diversity - A general field assessment of the number of different genera in a landscape.

25) Ornamental genera - This refers to flora that are established by man. Included in this factor are orchards, vineyards, or other fruit-bearing or flowering genera that do not occur naturally in the study area.

Cultural - Land Use*

26) Agricultural - Tilled land, pasture, cropland, or open fields used for agricultural purposes.

27) Residential - Groups of individual homes, apartments or condominiums.

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* All land use descriptive factors were evaluated as the percent of total area. Land use classification percentages were machine produced with the Printresults Function of the LARSYS Version 3 Software Package. (Courtesy of D.Scholz,LARS)

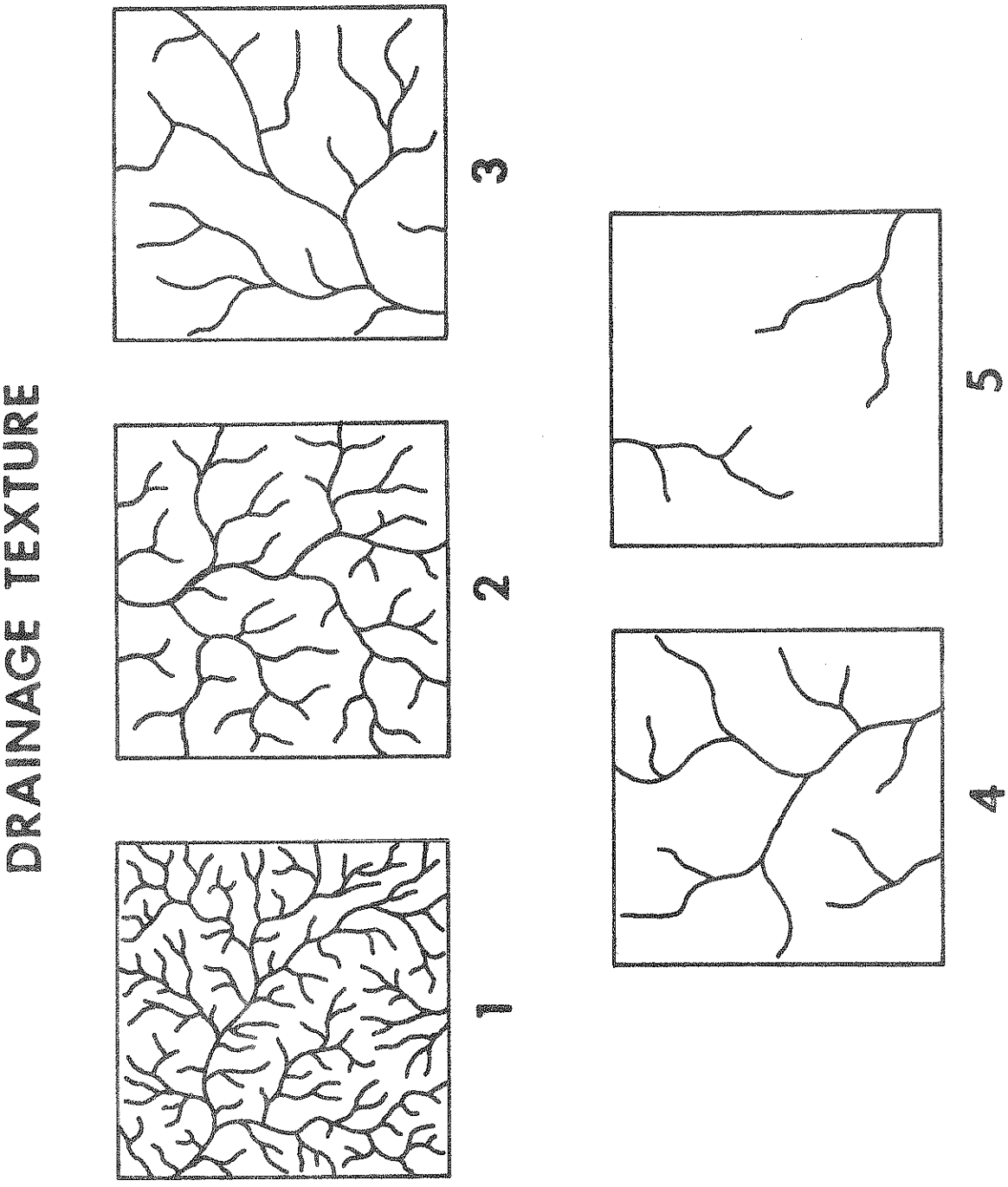

Figure 13.

28) Commercial - Distribution and merchandizing stores. Hotels, offices, restaurants, warehouses and motels are included in this category.

29) Industrial - Facilities for the production, manufacture or assembly of goods.

30) Forest, Shrubland - Areas predominantly covered with trees or shrubs.

Cultural - Other

31) Misfits - junkyards, landfills, garbage dumps, dilapidated homes, abandoned autos or other manmade features which seem out of place in a natural setting.

32) Quarries - Gravel and sand pits either actively being mined or abandoned.

33) Road, Railroads - A qualitative judgement of the number of roads and/or railroads visible at a particular station.

34) Structures - Bridges, billboards, dams, transmission lines, towers or any other structure present at each data station, other than buildings.

35) Population Density - A subjective judgement of population at each station.

36) Historical, Archeological Sites - The number of locations within a landscape that have historical or archeological qualities. Examples are old grist mills, battle sites and churches or schools of historical value.

These descriptive factors only partially define the total scenic resources in a landscape. For the sake of objectivism we have not attempted to evaluate intangible environmental factors, landscape elements that are inordinately difficult to measure, or scenic factors that are particularly subject to the bias of the observer. Another limiting factor of this technique is the knowledge and expertise of the investigators. We, as geologists, are "experts" only on the Physical descriptive factors. To precisely evaluate the scenic qualities of floral and faunal communities a biologist's skills are needed. Likewise, an urban planner's help would greatly enhance an evaluation of the scenic assessment of cultural entities. Subjectivism enters only in the selection of descriptive factors and the ranges of evaluation categories, but this drawback actually is advantageous because other users can modify the factors and categories to suit their own immediate needs. Descriptive factors can easily be added or deleted and evaluation categories can be adjusted for use in any physiographic or cultural setting.

Computation of Indices

Leopold (1969) employed a matrix and factor analysis technique to quantitatively evaluate scenic factors of riverscapes. Table 1 is a matrix in which each descriptive factor defines a row and each evaluation category delimits

a column. Any position on the matrix can be defined as $x_{i,j}$, where i is the descriptive factor number (1-37) and j is the evaluation category number (1-5) as shown below (Melhorn et al., 1974):

$$
\begin{array}{cc}
 & j \longrightarrow \\
 & \begin{array}{ccccc} x_{1,1} & x_{1,2} & x_{1,3} & x_{1,4} & x_{1,5} \end{array} \\
i \downarrow & \begin{array}{ccccc} x_{2,1} & x_{2,2} & x_{2,3} & \cdots\cdots & \end{array} \\
 & \begin{array}{ccccc} x_{3,1} & x_{3,2} & x_{3,3} & \cdots \text{ etc } \cdots & \end{array} \\
 & \begin{array}{ccccc} \vdots & \vdots & \vdots & & \end{array} \\
 & \begin{array}{ccccc} x_{31,1} & x_{31,2} & x_{31,3} & x_{31,4} & x_{31,5} \end{array}
\end{array}
$$

Leopold (1969) defined a "Uniqueness Ratio" (UR) as the reciprocal of the number of landscapes sharing the same evaluation category in any given descriptive factor. For example, if ten landscapes being evaluated have abundant low relief hills (factor 1, category 1) then the UR for all ten landscapes for this factor is 1/10 or 0.1. However, if a given landscape, A, is characterized by isolated high relief hills (factor 1, category 4), then its UR is 1/1 or 1.0 and the other nine landscapes have UR's of 1/9 or .111. Thus, for this descriptive factor landscape A is unique among the landscapes being considered. Of course, 1.0 is the maximum UR for any given factor. In computation of Uniqueness Ratios the number (1-5) given to each evaluation category has arbitrarily no good or bad connotation - category 1 of factor

25 is no better or worse aesthetically than category 5 of the same factor. Each descriptive factor is given equal weighting in the computation of UR's. Total uniqueness is the sum of the UR's within each physical, biologic or cultural group for each landscape.

The objective of computing Uniqueness Ratios is to determine how closely a landscape approaches a state of uniqueness relative to other landscapes. We realize that in the correct semantic usage, the state of being unique is absolute with no qualification of degree. However, we believe that the utilization of Uniqueness Ratios to compare aesthetic elements between landscapes is the most objective approach yet devised for scenic resource evaluation.

Melhorn et al (1974, p. 38) defined a Uniqueness Index (UI) as "the percentage of total possible uniqueness" in an evaluation of scenic riverscapes. The UI gives each descriptive group (physical, cultural, and biologic) equal weighting in addition to the equal weighting applied to each factor in the computation of UR's. This is necessary because the descriptive groups contain unequal numbers of descriptive factors. Each descriptive group UR subtotal is divided by the number of descriptive factors in that group. The UI is placed on a convenient scale of 1000 by multiplying each of the three descriptive group subtotals by 333.3. For example, if for the 21 descriptive physical factors a landscape receives 14 of a possible 21 points, then the UI for this physical group is $14/21 \times 333.3 = 222.2$. This computation

is performed on each Descriptive Group for all landscapes. The UI subtotals are then summed to give a UI total for each landscape.

To calculate Uniqueness Indices, the following procedure is utilized:

1) Sum the number of landscapes being evaluated which occupy the same position in the matrix.
2) The Uniqueness Ratio for each matrix location is the reciprocal of the number obtained for $x_{i,j}$ in step 1. Thus, UR = $1/x_{i,j}$.
3) Within each Descriptive Group, sum the UR values in each evaluation category column.

$$\text{Physical Group UR} = \sum_{i=1}^{i=21} \frac{1}{x_{i,j}}$$

$$\text{Biologic Group UR} = \sum_{i=22}^{i=25} \frac{1}{x_{i,j}}$$

$$\text{Cultural Group UR} = \sum_{i=26}^{i=37} \frac{1}{x_{i,j}}$$

4) The Uniqueness Index for each Descriptive Group is then computed as below:

$$\text{Physical Group UI} = \frac{\text{Physical Group UR}}{\text{number of physical descriptive factors (21)}} \times 333.3$$

$$\text{Biologic Group UI} = \frac{\text{Biologic Group UR}}{5} \times 333.3$$

$$\text{Cultural Group UI} = \frac{\text{Cultural Group UR}}{12} \times 333.3$$

5) A total UI for each landscape is then obtained by summing the Group UI's:

$$UI_{total} = UI_{physical} + UI_{biologic} + UI_{cultural}$$

Use of Uniqueness Ratios for evaluation of scenic factors in riverscapes has met with objections from some researchers on the grounds that "aesthetic desirability" is not considered - a landscape can be uniquely good or uniquely bad aesthetically (Coomber and Biswas, 1972; Cooke and Doornkamp, 1974; Hamill, 1975). Applying the hypothesis that what constitutes ugliness in the landscape is more universally agreed upon than beauty, we have identified "negative" aesthetic elements in the matrix, shown in Table 3. Melhorn et al (1974) described an Aesthetic Index (AI) as a measure of what constitutes beauty or ugliness in riverine landscapes. Aesthetic indices are numerically determined as follows:

$$AI = UI_{total} (1 - x/y)$$

assigning a zero value to any matrix position that is contrary to scenic beauty in riverscapes, where:

UI = Uniqueness Index

x = Total UR value zeroed at $x_{i,j}$ positions contrary to scenic beauty.

y = Total UR values of $x_{i,j}$ positions that could possibly have been zeroed.

Table 3. Zeroed matrix positions utilized in the calculation of Aesthetic Indices.

Factor	Evaluation Category to be Zeroed
27	3,4,5
28	3,4,5
29	3,4,5
31	3,4,5
32	4,5
33	3,4,5
34	3,4,5
35	3,4,5
36	4,5
37	1

For example, Fig. 14 illustrates a hypothetical computation of Uniqueness and Aesthetic Indices for two landscapes. The UI's (Fig. 14, Table b) indicate that landscape A is unique in more scenic factors than landscape B. However, landscape A has relatively high UR values for factors 1 and 2 which are antithetical to scenic beauty (Fig. 14, table c and a), whereas landscape B has only one unaesthetic factor (5), with a very low UR. Table d depicts adjusted UR's after "zeroing" evaluation categories considered as negative components of scenery in each landscape. Therefore, landscape B has a much higher AI value than landscape A (Fig. 14, table e). Thus, it is possible for a landscape to have a relatively high Uniqueness Index, but score low on the Aesthetic Index because of the presence of factors considered contrary to scenic

a)

Descriptive Factor	Evaluation Categories: Landscape A	Landscape B
1	4	1
2	4	1
3	2	3
4	1	2
5	5	4

b)

Descriptive Factor	Uniqueness Ratios: Landscape A	Landscape B
1	.750	.333
2	.333	.333
3	.500	1.000
4	1.000	.750
5	.500	.250
UI	$\frac{3.08}{5}$ (1000)=616	$\frac{2.67}{5}$ (1000)=534

$UI = \frac{UR_{total}}{5} \times 1000$

c)

Descriptive Factor	Evaluation categories antithetical to scenic beauty	
1	3,4,5	$(x_{1,3}, x_{1,4}, x_{1,5})$
2	4,5	$(x_{2,4}, x_{2,5})$
3	None	
4	None	
5	5	$(x_{5,4}, x_{5,5})$

d)

Descriptive Factor	Adjusted Uniqueness Ratios: Landscape A	Landscape B
1*	0	.333
2*	0	.333
3	.500	1.000
4	1.000	.750
5*	.500	0

* = descriptive factors which could have been zeroed

e)

Computation of AI

Landscape A	Landscape B
$AI = UI(1 - \frac{x}{y})$	$AI = UI(1 - \frac{x}{y})$
$x = .750 + .333 = 1.08$	$x = .250$
$y = .750 + .333 + .500 = 1.58$	$y = .333 + .333 + .250 = .920$
$UI = 616$	$UI = 534$
$AI = 616(1 - \frac{1.08}{1.58}) = 197$	$AI = 534(1 - \frac{.250}{.920}) = 390$

Figure 14. Hypothetical calculation of Aesthetic and Uniqueness Indices.

quality. However, if a landscape contained no ugly elements, x=0, and AI=UI.

METHOD OF DATA ANALYSIS

An optimal degree of discrimination between "unique" and "commonplace" factors of landscape scenery seems possible if a population of 4-7 is utilized in the calculation of Uniqueness Indices (Melhorn et al., 1974, p. 79). For this reason, Tippecanoe County was divided into nine "Sections" of 5-7 landscapes each in order to compute the relative Uniqueness and Aesthetic Indices of each landscape (Fig. 15). The sections were delineated on the basis of the geographic similarity of their respective landscapes.

Relative UI's and AI's were calculated for each landscape in each section. All computations were machine generated by utilization of the LAND program (Melhorn et al., 1974). The results are presented on Graphs 1-9. Matrix data, uniqueness matrices and aesthetic matrices for each landscape, by sections, are tabulated in Appendix A. It must be remembered that Uniqueness and Aesthetic Indices are relative and serve only to hierarchially rank the landscapes of each section in order of aesthetic quality according to the evaluated criteria. Scores within a particular section may be considered "absolute", but the comparison of AI or UI scores between landscapes of different Sections is meaningless.

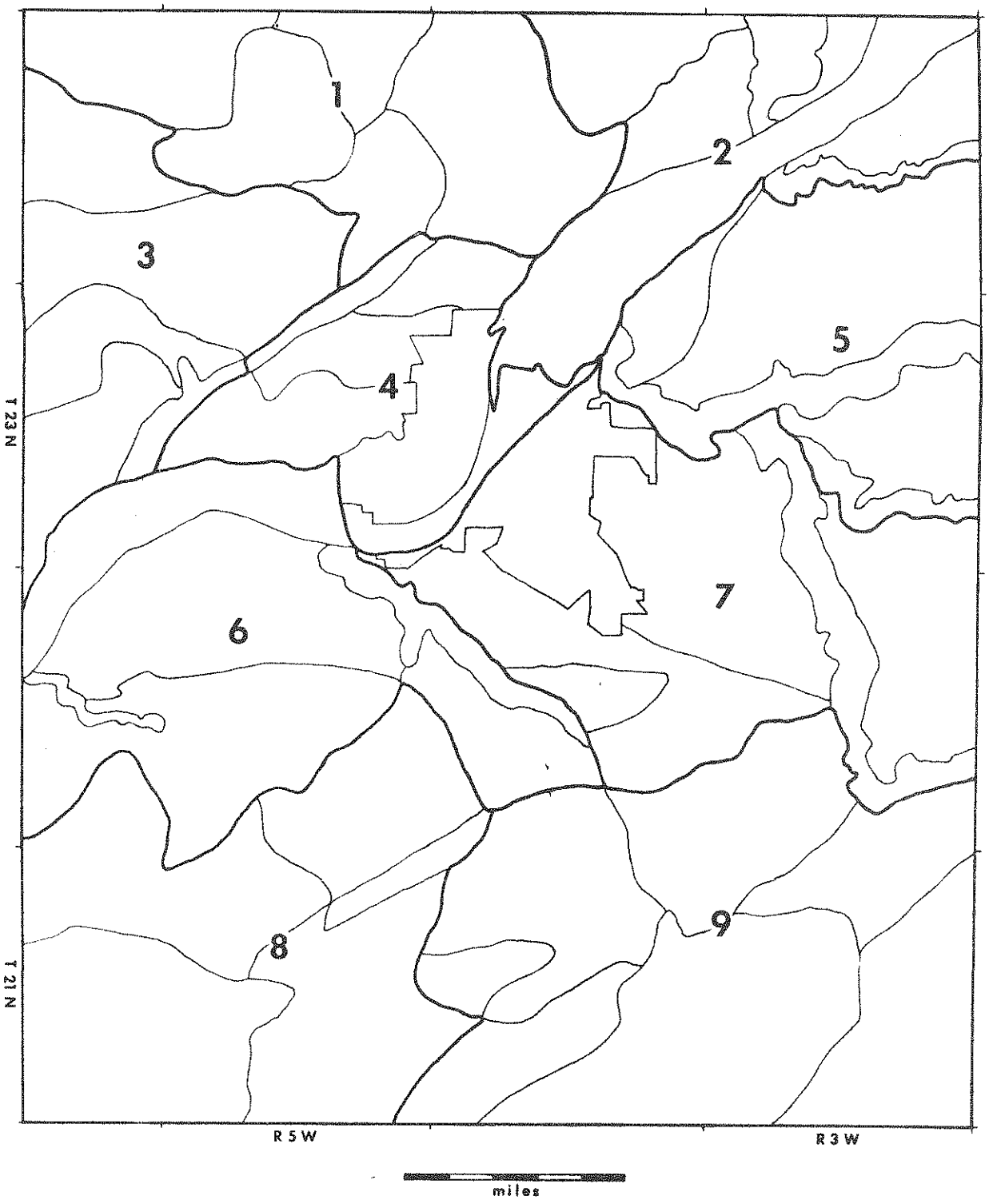

Figure 15. Sections utilized in data analysis (see Fig. 5).

A second set of indices was then computed for the set of landscapes which received the highest AI value in each of the nine Sections. These Uniqueness and Aesthetic Indices are presented as Graph 10. Data and matrices for these landscapes appear also in Appendix A. This technique permits a hierarchical ranking of the nine most scenic landscapes in Tippecanoe County, as determined by the Aesthetic Indices.

DISCUSSION OF RESULTS

Uniqueness Indices and Aesthetic Indices for Section 1 are shown on Graph 1. Landscape Y2 has the highest UI and AI among these landscapes. Y2 is a slightly rolling area of ground moraine (Photo 4). Several small kames and eskers are present in the western portion of this landscape. Y2 is somewhat dissected by small tributaries to Burnett's Creek. Local relief averages 30 feet, and a total of 60 feet of relief exists across the entire landscape. Land use is predominantly agricultural (60%) with much forest (30%) concentrated around Burnett's Creek*.

The "upper" Wabash Valley received the highest AI and UI values in Section 2. UI's and AI's for Section II are shown on Graph 2. The upper Wabash Valley is a wide, riverine landscape with a flat, terraced valley floor. Steep valley walls rise as much as 230 feet above the river

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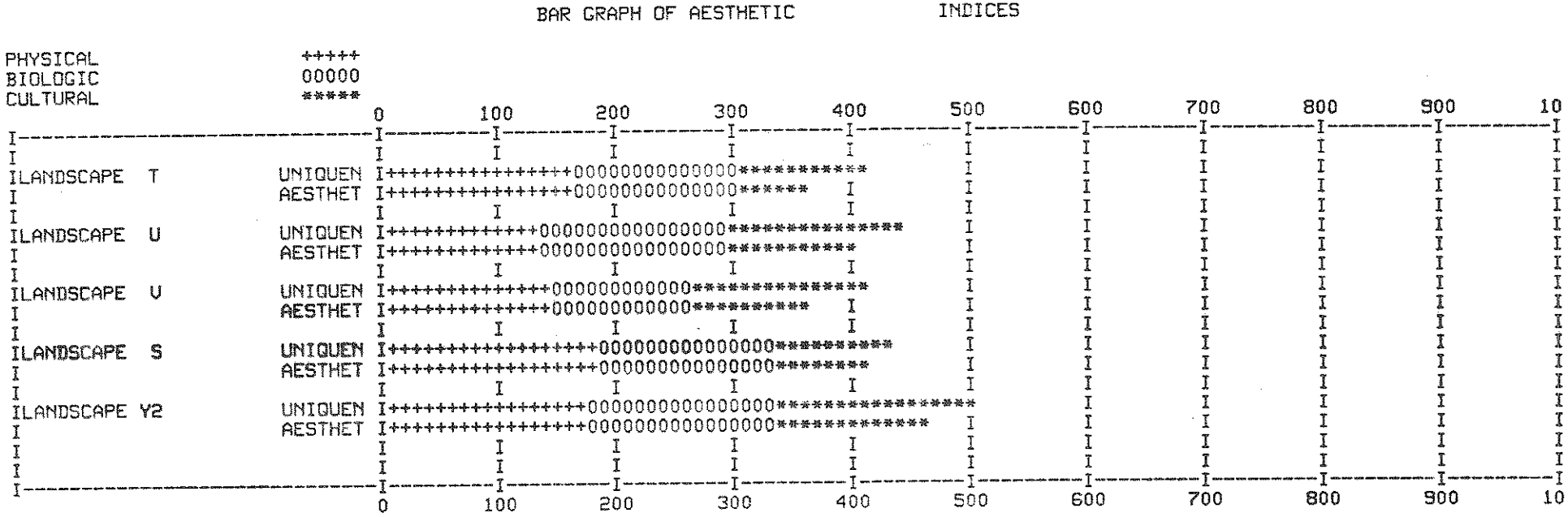
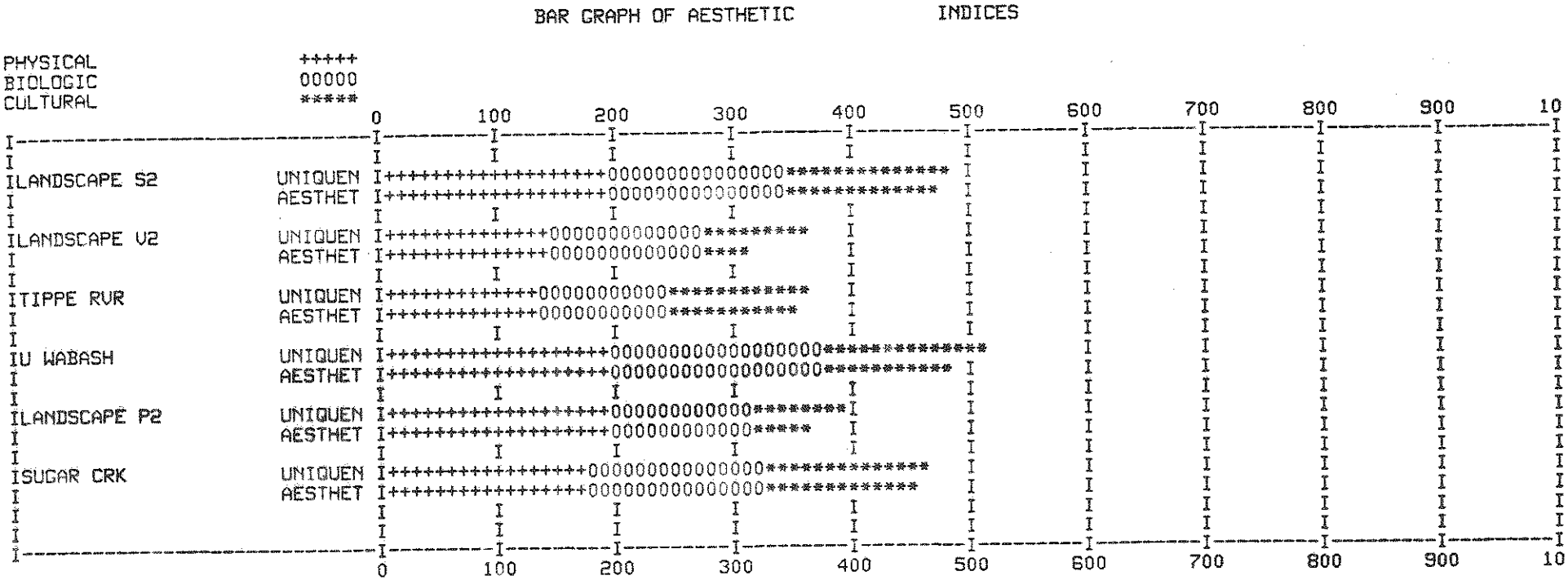
* All percentage values are taken from the automatic data processed land use map of Tippecanoe County.



Graph 1. Section 1 Indices (see Appendix A for data and matrices).

Photo 4. Landscape Y2 near Highway I-65. A gently rolling terrain with mixed agricultural and forest land use.



Graph 2. Section 2 Indices

(Photo 5). Sand dunes are present over much of the valley floor. Land use in this area is predominantly agricultural (68%) with relatively much forest (20%).

Section 3 landscape UI's and AI's appear on Graph 3. Landscape R received the highest UI rating but was second to the Indian Creek Valley on the Aesthetic Index. This is because a greater degree of urbanization in R results in more "zeroed" factors on the Aesthetic matrix, relative to Indian Creek (Appendix A). Indian Creek Valley is very narrow with steep walls and as much as 160 feet of relief (Photo 6). Several small terraces and meander cores are present in the lower part of the valley. The valley is predominantly forest (65%), but with 30% agricultural land use.

Section 4 landscape UI's and AI's are shown on Graph 4. In UI ratings, West Lafayette and the "middle" Wabash Valley had identical values. Owing to heavy urbanization, both of these landscapes were penalized heavily in the Aesthetic matrix (Appendix A). Even so, among Section IV landscapes the middle Wabash Valley received the highest AI value. The middle Wabash Valley is wide with well developed terraces and numerous sand dunes (Photo 7). Relief of 180 feet exists in the northeastern part of this landscape. Again, land use is predominantly in the agricultural class (47%), with substantial residential (19%), commercial (7%), and industrial (5%) land uses.

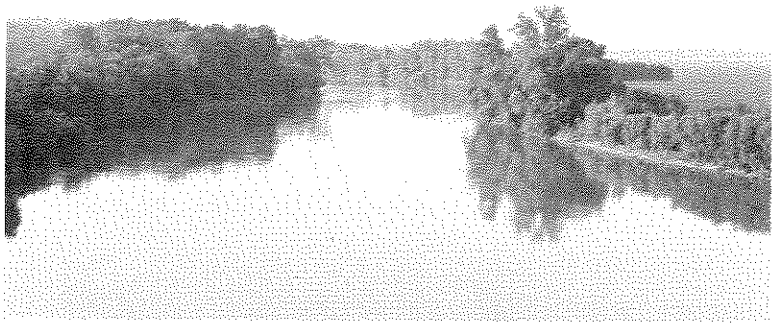
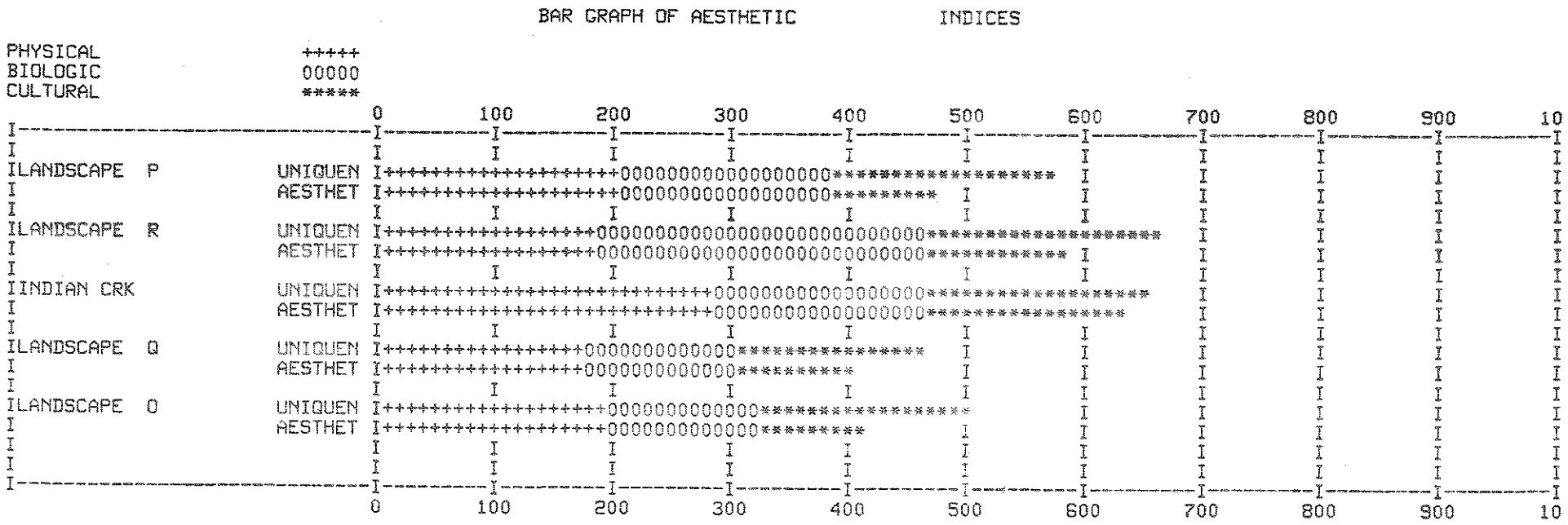
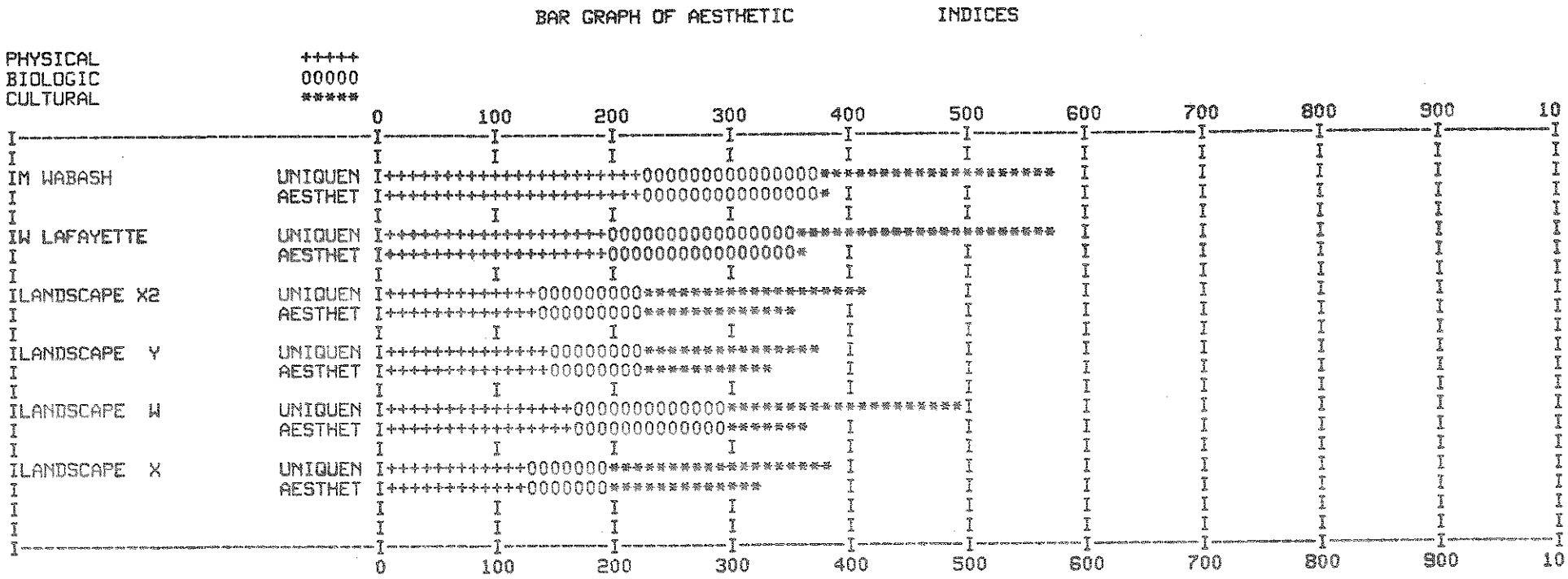


Photo 5. The Upper Wabash River Valley, near Highway US-52. A landscape of wide, terraced valley floor, steep valley walls, and agricultural land use.



Graph 3. Section 3 Indices

Photo 6. Indian Creek Valley, near Granville Bridge southwest of Lafayette. A steeply sloping, topographically diverse valley area with minor suburbanization.



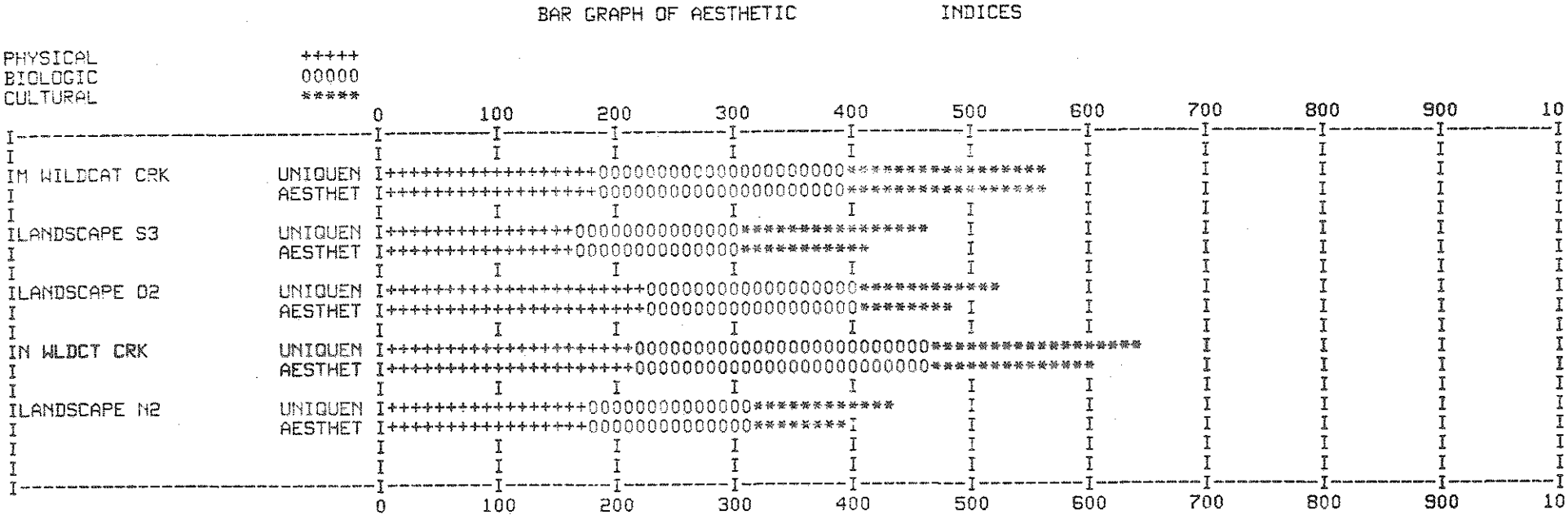
Graph 4. Section 4 Indices

Photo 7. Middle Wabash Valley - a wide river valley with well developed terraces and heavy urbanization.

Section 5 landscape UI's and AI's appear on Graph 5. Wildcat Creek Valley received the highest UI and AI ratings. Interestingly, there was no change in rank of the landscapes from the Uniqueness to the Aesthetic matrices. Wildcat Creek has a moderately wide, flat floored valley with some terrace deposits (Photo 8). Relief ranges up to 130 feet but averages about 90 feet along the steep valley walls. The stream receives heavy recreational use from campers, fishers, canoers and picnicers. Land use is mostly agricultural (55%), with much forest (40%).

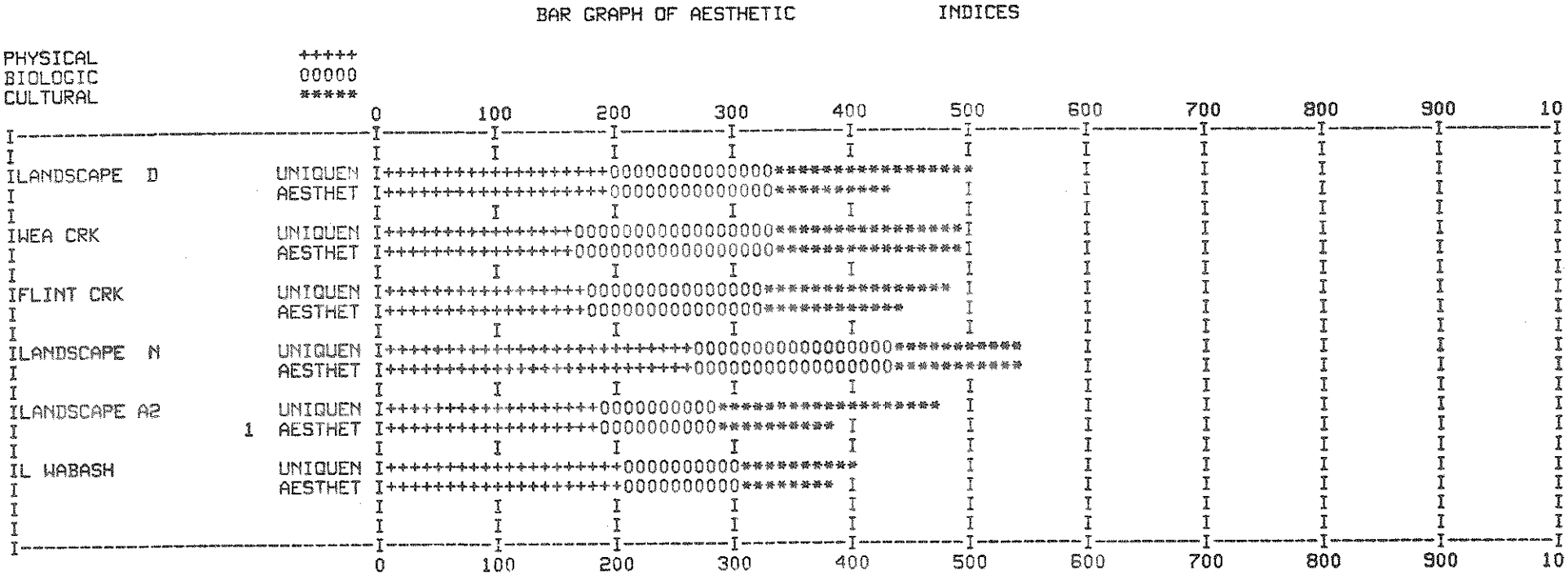
Section 6 landscape UI's and AI's appear on Graph 6. Landscape N received the highest AI and UI ratings. N is the broad, flat surface of the western portion of the Wea Outwash Plain (Photo 9). Sand dunes are present near the Wabash River. Relief in landscape N rarely exceeds 10 feet locally and few streams are present. Ninety-five percent of the surface is used for agricultural purposes. Landscape N contains several sites of historical and archaeological interest and has been designated as a scenic area by the Tippecanoe County Historical Society. Many beautiful, unobstructed panoramic views across the Wabash River are possible in this landscape.

UI's and AI's for Section 7 landscapes appear on Graph 7. Lafayette received the highest UI rating, but placed relatively low in AI rank because of intense urbanization. South Fork Wildcat Creek Valley ranked highest in AI value. This valley



Graph 5. Section 5 Indices

Photo 8. Wildcat Creek Valley near County Road 300 East. A flat, moderately wide and densely tree-covered valley floor is accentuated by steep valley walls of relatively high relief.



Graph 6. Section 6 Indices

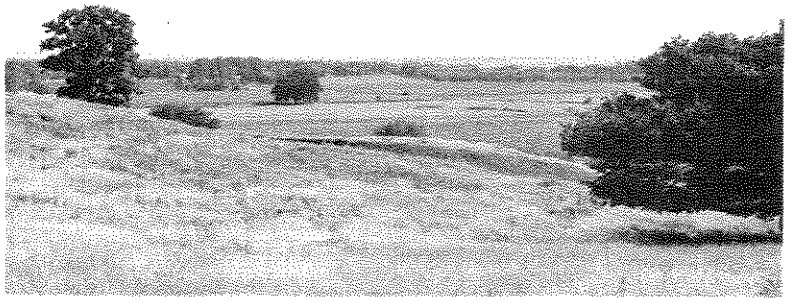
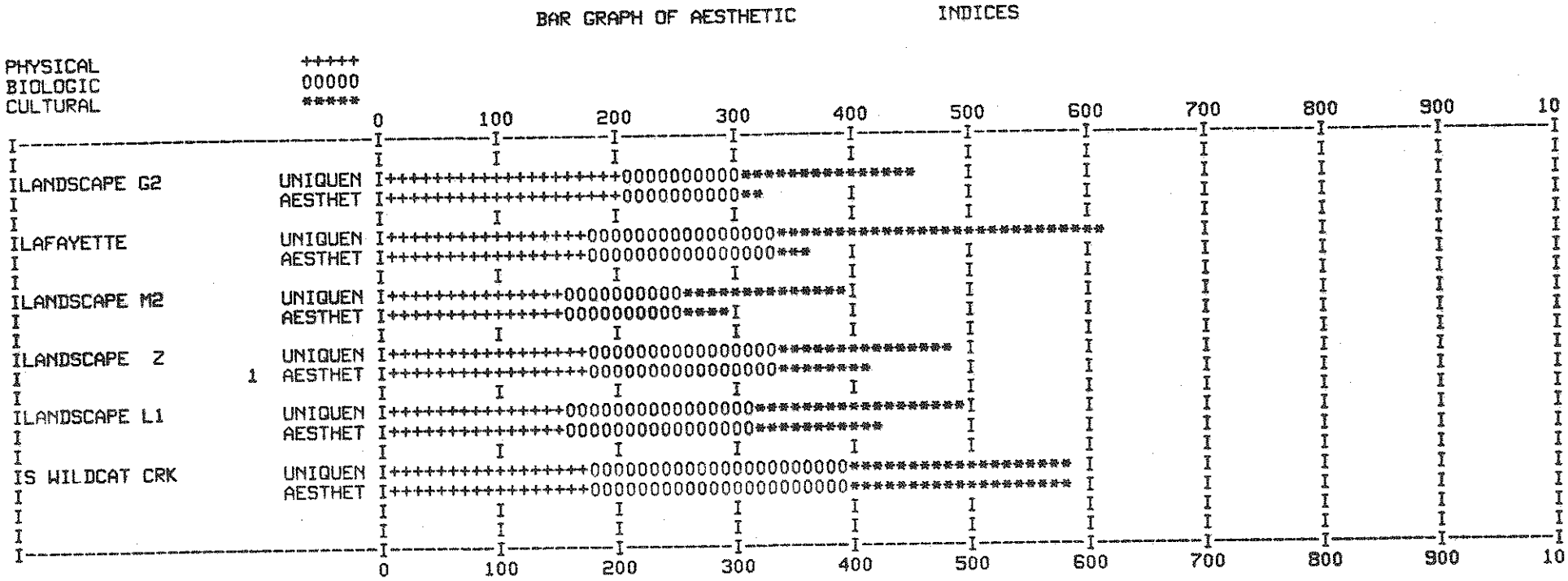


Photo 9. Landscape N, a panoramic view across the Wea Outwash Plain near High Gap, south of Lafayette. The Wabash River Valley is in the background.



Graph 7. Section 7 Indices

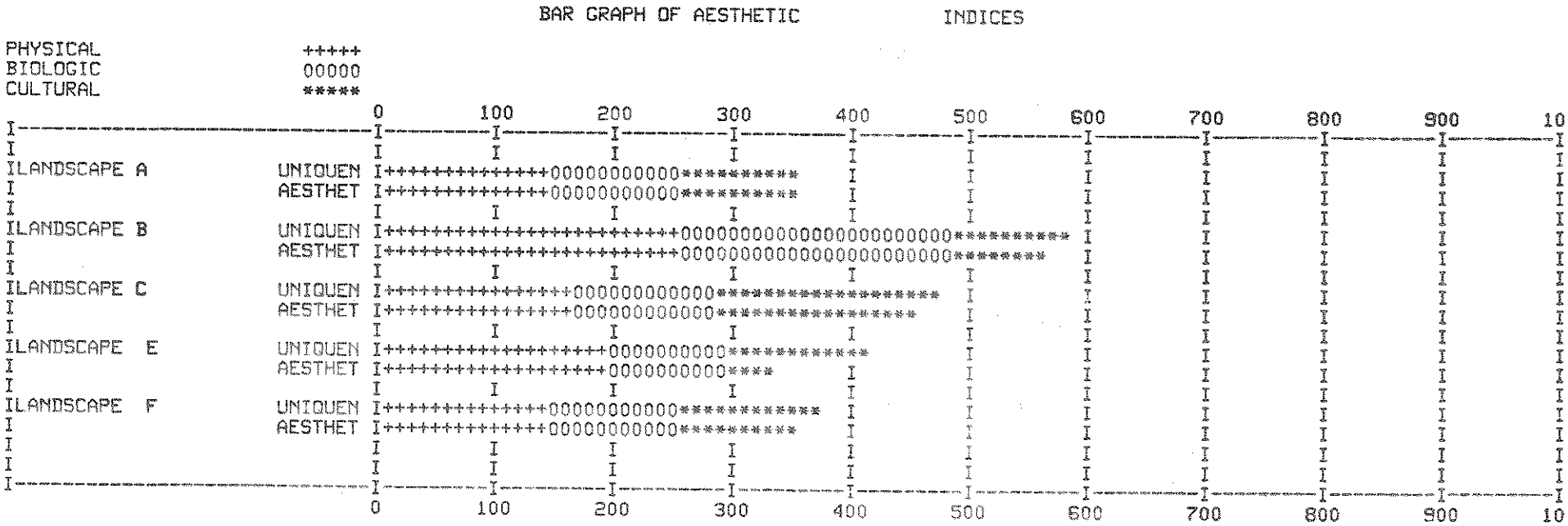
is moderately wide, with well developed terraces and steep valley walls (Photo 10). Total relief in this landscape is 200 feet although relief rarely exceeds 80 feet locally. The surface is heavily forested (42%) but most (55%) of the land is farmed.

UI's and AI's for Section 8 landscapes appear on Graph 8. Landscape B ranked highest in both AI and UI values. B contains Raub Esker and Esker Trough (Photo 11). Total relief in this landscape is 80 feet but local relief rarely exceeds 40-50 feet. Land use is predominantly agricultural (87%) with some forest (10%).

Section 9 landscape UI's and AI's appear on Graph 9. Landscape G ranked first in AI and UI ratings. G is an area of rolling ground moraine and includes the Romney Esker (Photo 12). Local relief averages about 30-40 feet although total relief within the landscape is 70 feet. Land use is mostly agricultural (72%) and forest (20%), with a substantial (7%) residential class.

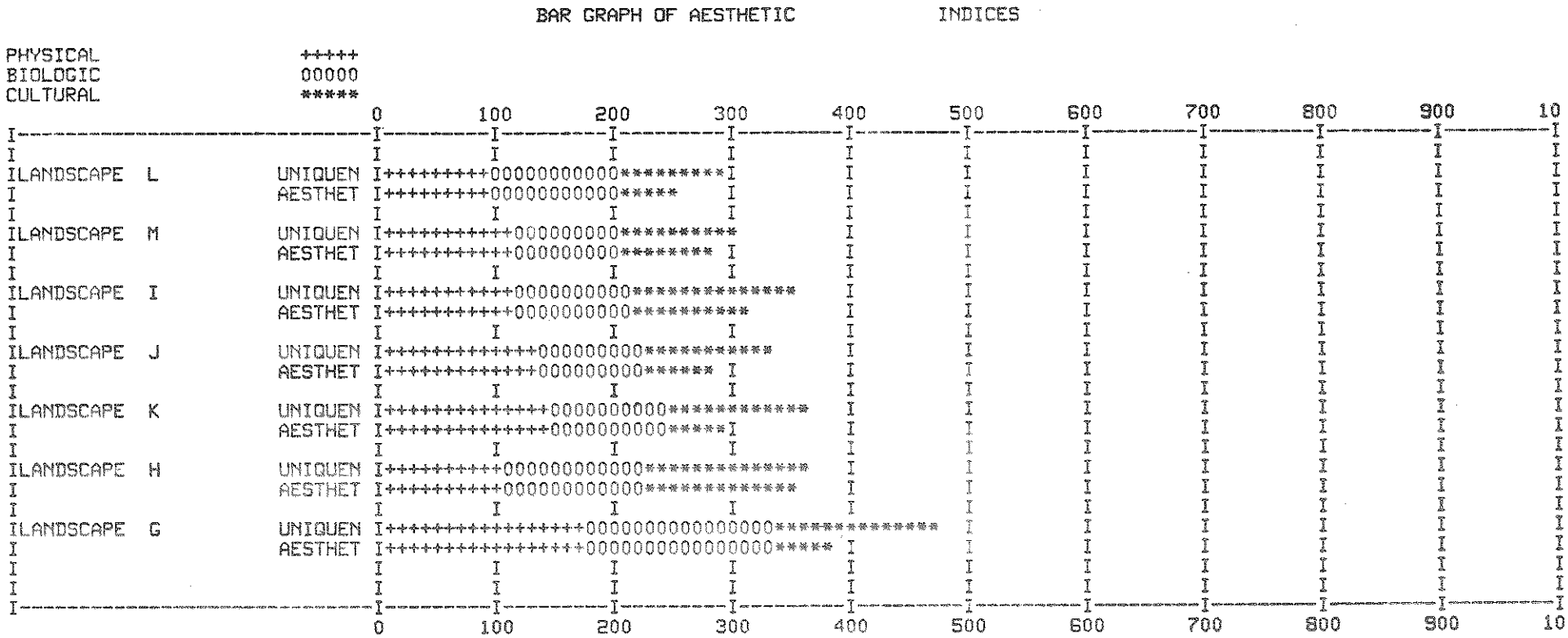
Of the nine landscapes determined most scenic in Tippecanoe County, five were stream valleys (Fig. 16). Six of the nine sections evaluated contained stream valleys, and except for Section 6, a stream was found most scenic in every section. Stream valleys are particularly scenic in this region for geologic and cultural reasons. The Tipton Till Plain is characterized by relatively flat ground moraine deposited by continental ice sheets during the Wisconsinan (10,000-

Photo 10. South Fork Wildcat Creek, near Highway 26 east of Lafayette. A narrow, densely forested valley flats with high relief valley walls.



Graph 8. Section 8 Indices

Photo 11. Landscape B in southern Tippecanoe County. The Raub Esker, covered with trees, is in the middle ground. (Near County Road 300 West)



Graph 9. Section 9 Indices

Photo 12. Landscape G, near Romney. The rolling ground moraine surface and the Romney Esker (in background) produces an interesting and topographically diverse area. Land use is dominantly agricultural.

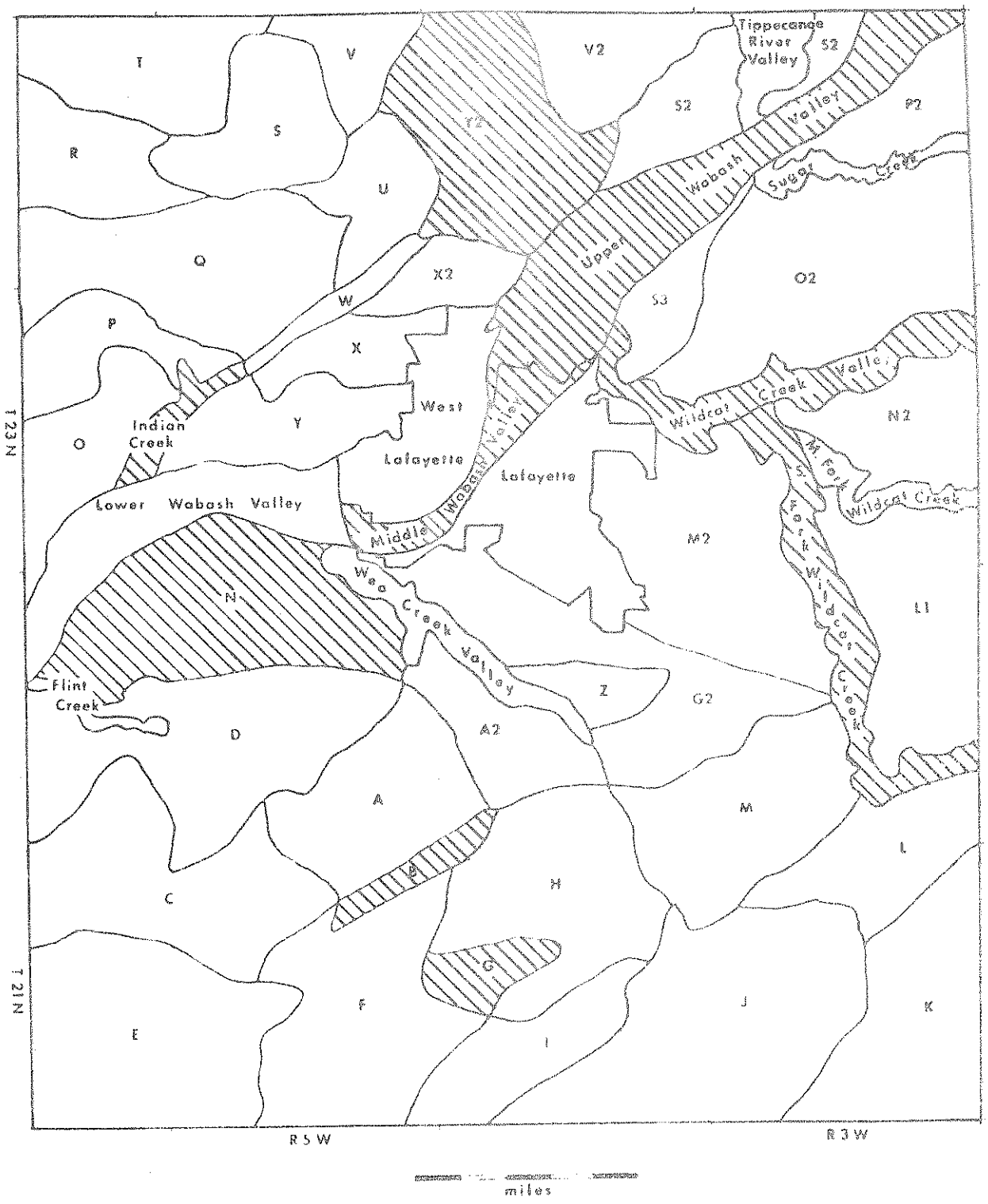
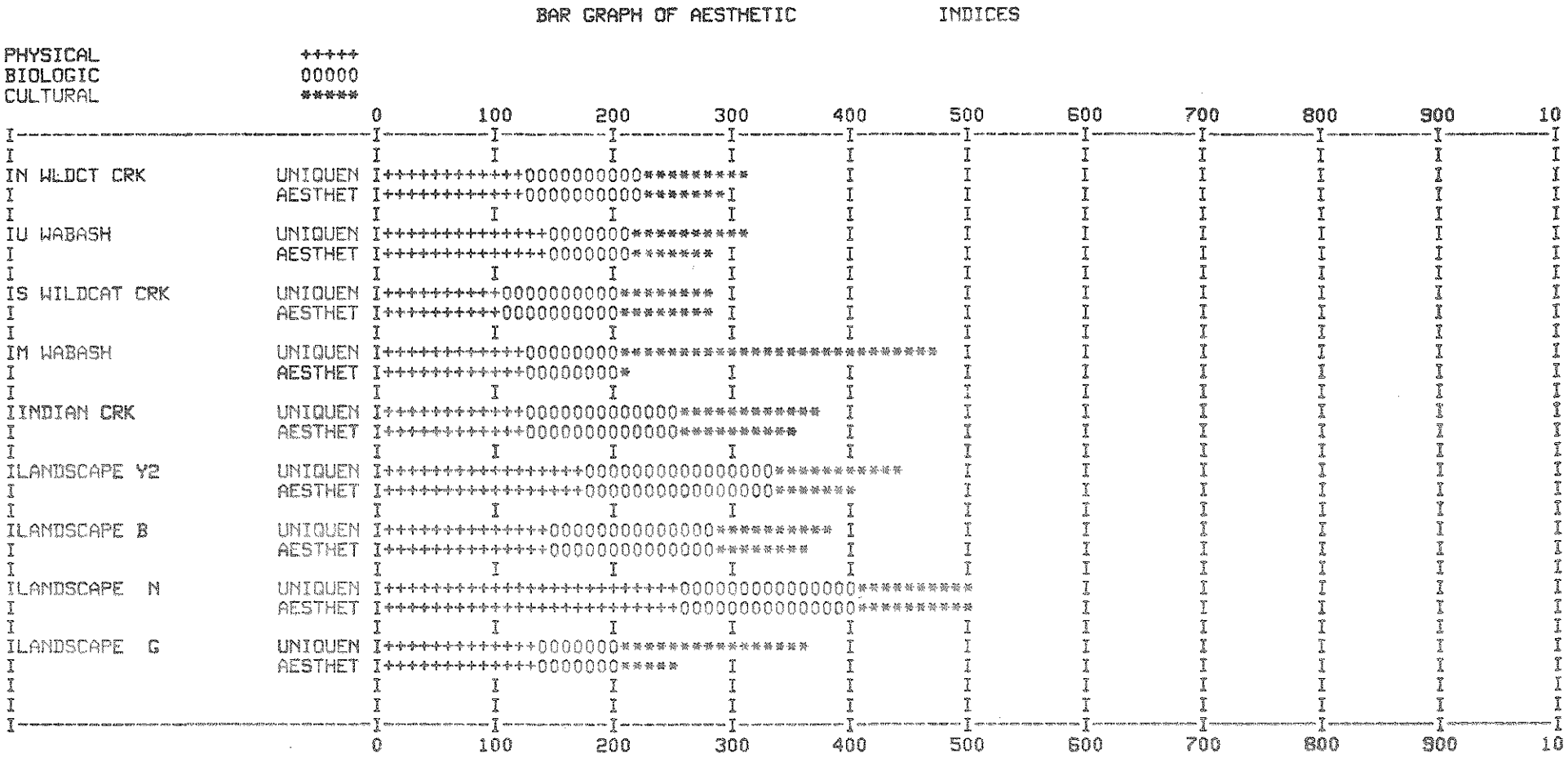


Figure 16. Scenic landscapes of Tippecanoe County.

80,000 yrs BP) Glacial Stage. The original flatness plus the lack of a well integrated, graded drainage network (owing to the geologic "newness" of the region) causes the Tipton Till Plain to be a rather featureless surface. Relief is relatively minor and major streams are widely spaced in this region. Also, a large portion of the land has been cleared of indigenous vegetation for agricultural purposes. However, streams like the Wabash River which have dissected this surface form deep and topographically diverse valleys. Steep slopes and high relief along the valley walls of these streams contrasts dramatically with flat, terraced valley floors. In many parts of the valleys native floral and faunal communities are still intact. Culturally, the major use of stream valleys is agricultural. Obviously, relative to the interfluvial areas, stream valleys in this region have the essential ingredients for unusually aesthetic scenery: 1) high relief; 2) presence of abundant surface water; 3) diversity of topographic form; 4) natural and diverse floral and faunal communities; and 5) relatively low amounts of urbanization.

The nine landscapes ranked most scenic in their respective sections were then compared, using the LAND data analysis system. UI's and AI's for these landscapes are shown on Graph 10. Landscape N was rated as most unique and most aesthetic among these landscapes. The middle Wabash Valley ranked very high in uniqueness but was given



Graph 10. Indices for landscapes determined to be most scenic in their respective sections.

the lowest AI because of urbanization. Even though stream valleys rated very high aesthetically in their respective sectional areas, in the final analysis three of four interfluvial landscapes received higher AI values than any of the stream valleys. Although five of the landscapes in this secondary analysis are stream valleys with very similar physical, cultural and biologic characteristics, the other four landscapes (Y2, G, B, N) are upland, interfluvial areas which are neither similar to each other nor to the five stream valleys. Landscape N is not characterized by high relief, topographic diversity, or abundant surface water, but it has extremely unusual physical, cultural and biological qualities relative to the other eight landscapes. It is important to remember that all nine landscapes may be considered as highly scenic.

AESTHETICS AND RESOURCE POTENTIAL OF WATER DOMINATED LANDSCAPES

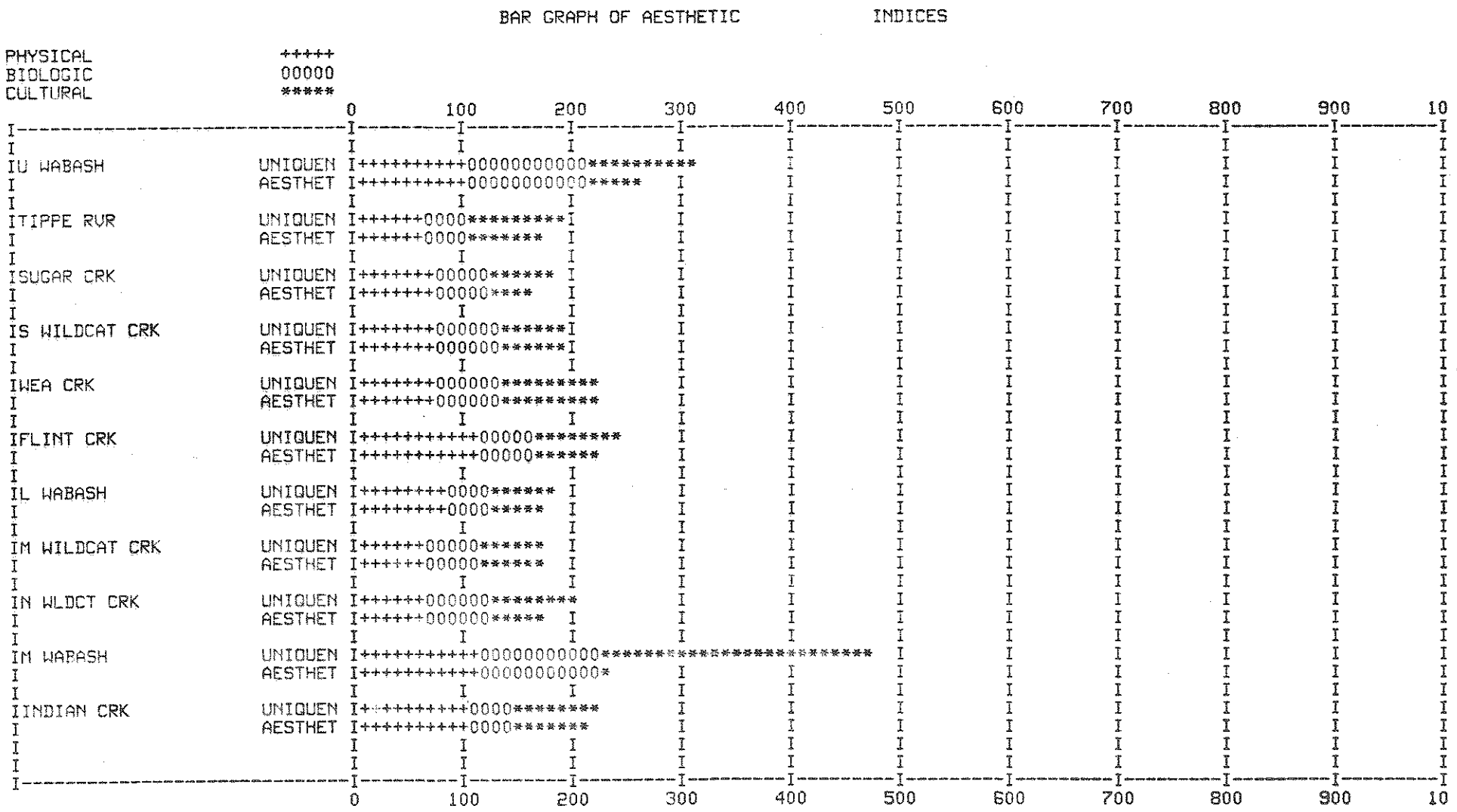
A) Streams

In the preceding analysis of landscape aesthetics, we found that five of the nine most scenic landscapes in Tippecanoe County are stream valleys. Other researchers (Linton, 1968; Morisawa, 1968; Leopold, 1969; Morisawa, 1971; Kuska et al., 1974; Melhorn et al., 1974; Michaelson, 1974; Keller and Bedford, 1974; and Knudson et al., 1974) have recognized the scenic significance of surface water in landscapes. For these reasons we have analyzed the aesthetic value and resource potential of the major streams and lakes in Tippecanoe County.

Eleven major streams in Tippecanoe County were aesthetically ranked by use of the LAND system. UI's and AI's for these streams are shown on Graph 11. Matrix data, uniqueness and aesthetic matrices for these streams appear in Appendix A. The middle Wabash River Valley was rated most unique but ranked second to the upper Wabash Valley on the Aesthetic Matrix owing to urbanization. Flint Creek, Wea Creek and Indian Creek also were ranked very high in AI values.

The Wabash Valley presently receives fairly heavy usage by campers, fishers, boaters and hikers. This valley is the largest, most diverse and most unique landform in the area. Although the middle portion of the valley is urbanized by the Lafayette and West Lafayette communities, its steep and high valley walls rise above a flat, terraced valley floor and offers scenery unexceeded in the region. The upper portion of the Wabash Valley is most spectacular, and is less spoiled by the presence of major urban areas than are the lower or middle portions. Flint Creek, Wea Creek and Indian Creek are much smaller streams than the Wabash River. Therefore boaters and campers rarely utilize these landscapes. However, fishers and hikers are commonly seen along these streams.

Stream channed morphology is very delicately adjusted to discharge, slope, sediment load, and bed and bank material type. Urbanization can alter any or all of these factors and



Graph 11. Indices for selected streams in Tippecanoe County

thus transform a beautiful, pristine brook into a polluted, sediment-clogged stream which constantly floods and erodes adjacent property. Small streams are particularly susceptible to the deleterious effects of urbanization. Wea, Indian and Flint creeks all are experiencing the impacts of residential growth. These streams and their valleys are highly scenic and valuable to the Tippecanoe County community as recreational resources. For these reasons Wea, Flint and Indian creeks should be protected, through land use management practices, against the adverse effects of urbanization and overuse, for the enjoyment of future generations.

The streams most heavily used recreationally in this region (Tippecanoe River and Wildcat Creek) are ranked relatively low by the Aesthetic matrix. These streams have commonplace physical, cultural and biologic characteristics relative to the aforementioned streams. These results are consistent with the rankings of Melhorn et al (1974, p. 92). Heavy usage of these streams is probably the result of easy accessibility and appropriate size.

B. Natural Lakes

Although Tippecanoe County has a number of scenically valuable streams, natural lakes are quite rare. When first settled, most of the county south of Wabash River consisted of high-grass prairie and wood lots, dotted with numerous small lakes, ponds, and seasonally flooded marshes. Because of the high water table and insect-borne diseases endemic to standing water, ditching, tiling, and crude channelization occurred at a very early date. Even larger ponds and small

lakes were drained to convert the land to agriculture. The few small natural lakes that remain are now mostly eutrophic and subject to high rates of filling and pollution through sediment influx. However, they tend to support a delicate and often unique suite of floral and faunal communities, and the scenic values imparted tend to increase adjoining property values greatly. It is only common sense to attempt to preserve or even improve the few natural lakes that still exist. Therefore, we evaluated the scenic and recreational value of selected lakes in a detailed, qualitative sense after completing the numeric evaluation of the landscapes in which these lakes occur.

Hadley Lake is the largest lake in the county. It is located northwest of West Lafayette in sections 35 and 36, T24N, R5W. The lake occupies a portion of a large kettle basin in the "Hadley Lake Lineament". Morphometric data for Hadley Lake, other nearby natural ponds, and the artificial lakes discussed subsequently are given in Table 4.

Surrounding Hadley Lake is an area of numerous, rolling hills (Fig. 17) of low relief. The lake has no permanent inlet or outlet. A residential community is developing in this area; however, presently the land immediately adjacent to the lake is in row crops or pasture. Occasionally fishermen visit the lake; otherwise, Hadley Lake has little utility. Most of Hadley Lake shoreline is covered with trees and heavy underbrush. Some green algae and trees are present

Lake	Area ($meters^2$)	Maximum Length (meters)	Maximum Breadth (meters)	Length of Shoreline (meters)	*Development of Shoreline
Hadley	356768	1018	256	3170	1.50
North Purdue	193248	640	488	1951	1.25
South Purdue	130064	664	475	2255	1.76
Upper Vinton Woods	433	110	62	243	3.29
Middle Vinton Woods	343	150	37	346	4.64
Lower Vinton Woods	679	168	57	427	4.62

*Development of shoreline(D_W) is the ratio of the length of shoreline to the length of the circumference of a circle of equal area as the lake:

$$D_L = L/2\sqrt{\pi A}$$ where L = shoreline length, A = lake area

D_L is considered as a measure of the potential effect of littoral processes (shoreline erosion, vegetation growth) on the lake, area being constant (Hutchinson, 1957).

Table 4. Morphometric data for selected lakes in Tippecanoe County

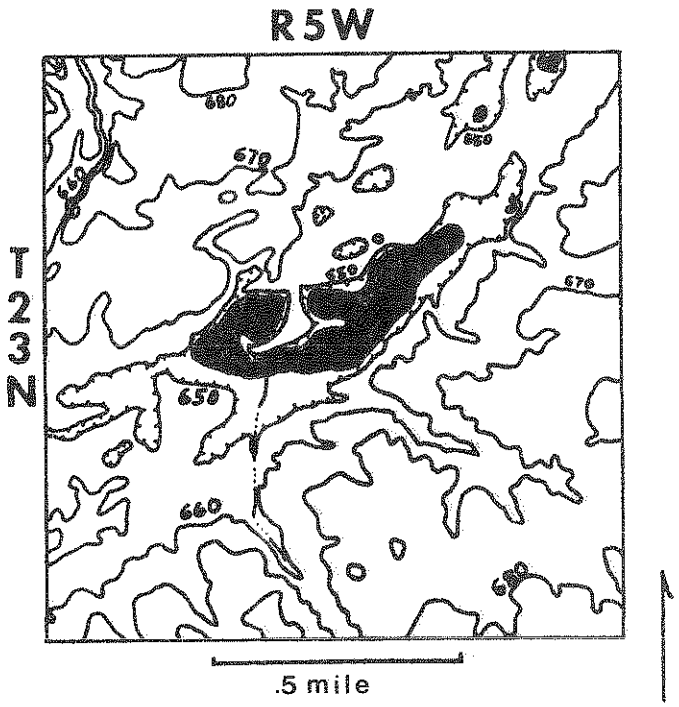
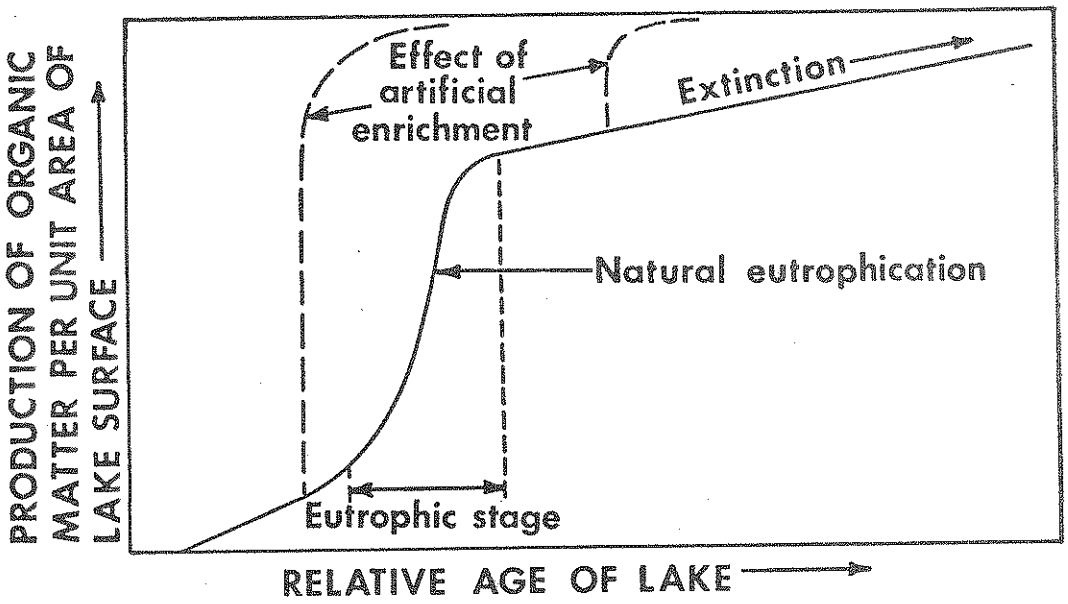


Figure 17. Topography of area near Hadley Lake

in the littoral zone; otherwise, the water is relatively clean and clear. The shallower east and west ends of the lakes are approaching a state of eutrophication. Numerous water plants and much green algae are found in these areas.

Hadley Lake is located near an expanding community and development practices which may be detrimental to the integrity of the lake should be avoided. Although lake eutrophication is a natural process, human activity can greatly accelerate this process, primarily through increased sedimentation and nutrient influx (Britton et al., 1975; Rickert and Spieker, 1971) as depicted in Figure 18. Because Hadley Lake has no major inlet, sedimentation problems could be minimized as surrounding areas are developed. However, as shown in Figure 19, much of the soil surrounding the lake is severely susceptible to erosion. These areas should be protected by vegetative cover during development to prevent large influxes of sediment into the lake. Nutrient enrichment greatly depletes oxygen in lake waters and makes the lake unsuitable for aquatic life. The artificial enrichment of nutrients in Hadley Lake is presently being caused by runoff from surrounding fields that have been treated with fertilizer. Further homesite development in the area may cause a great increase in nutrient enrichment because of an increase in use of septic tank systems. Effluent from septic tanks can seep into the lake by overland flow and through the subsurface. Use of septic tanks should be avoided in areas near the lake



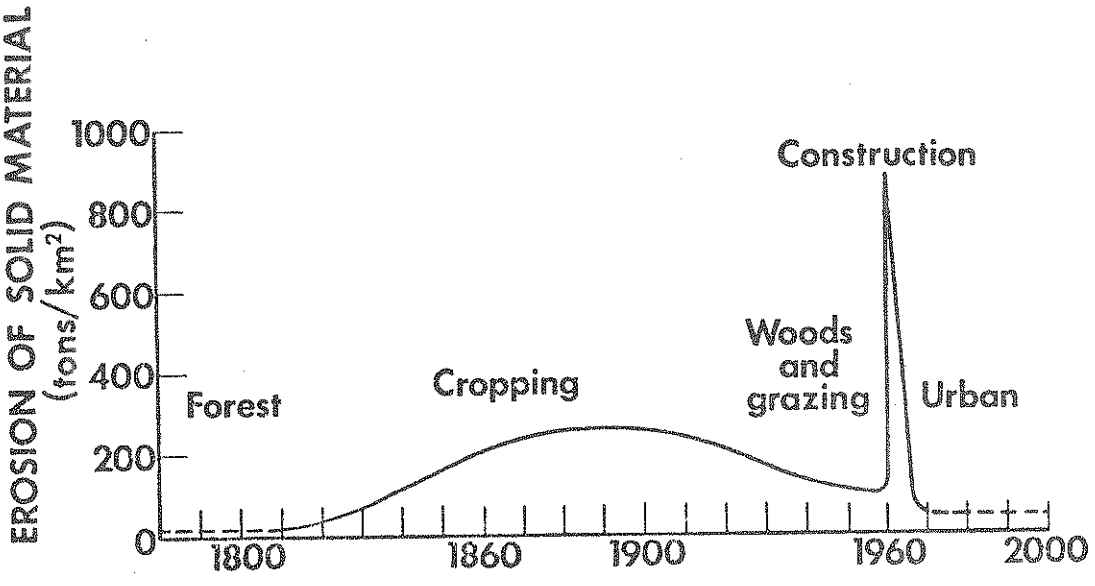
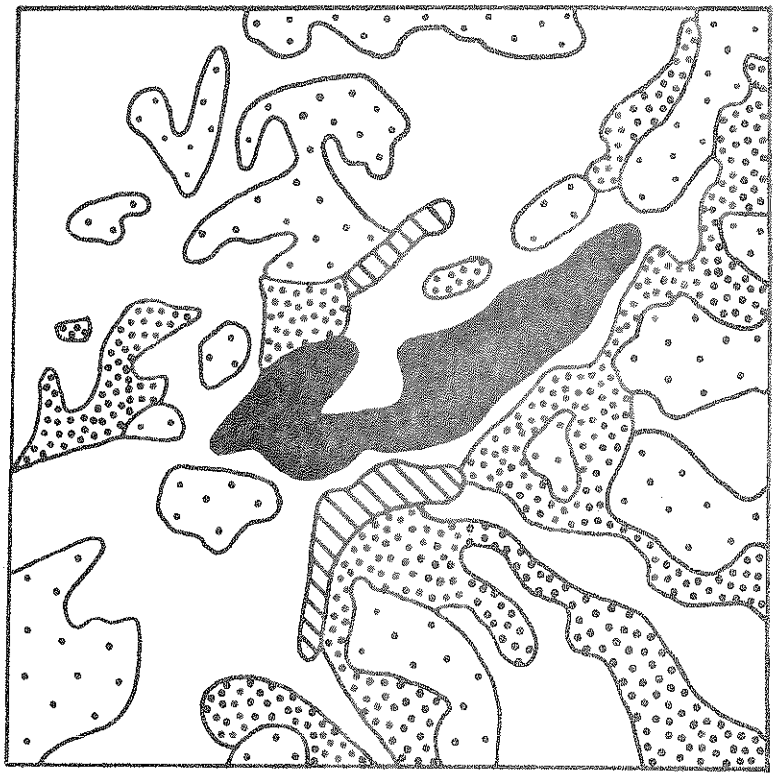


Figure 18. Impact of human activities on small lakes



.5 MILE

No hazard

Slight

Moderate

Severe

Figure 19. Soil erosion hazard near Hadley Lake

and, as development proceeds, the use of fertilizers on lawns should be minimized also.

Purdue University Ponds are located west of West Lafayette in section 12, T23N, R6W. These natural lakes are second in size to Hadley Lake in Tippecanoe County (Fig. 20). The lakes occupy a low area of peat and muck soils which are probably the site of a formerly more extensive post-glacial lake.

The lakes are in a relatively flat area of ground moraine; however, low bluffs overlook the lakes on the west and north. These lakes have no major inlets or outlets. Land use near the lakes is exclusively agricultural. The ponds are presently in a Purdue University wildlife conservation area. No fishing is done in these lakes and they are not used for recreational purposes.

The Purdue University Lakes are in an advanced stage of eutrophication. The littoral zones are choked with water plants and algae. Green algae are abundant in the water and some blue-green algae are present. Large portions of the lakes are now swamps. The lakes are surrounded by heavy underbrush but few trees. The shoreline is composed of peat and muck and is covered with aquatic plants and algae. Nearby residents report no fish in the lakes, but the surrounding area is teeming with wildlife.

The surrounding area will remain agricultural and no urbanization is anticipated in the near future. Therefore,

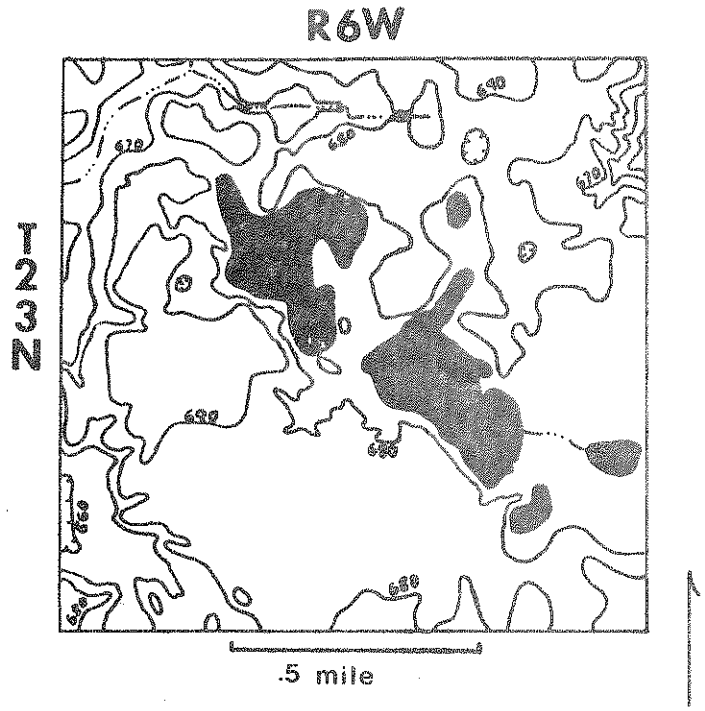


Figure 20. Topography near Purdue University Ponds

the lakes have little or no effect on surrounding property values. Aesthetically, the pastoral setting and abundant wildlife make these lakes very appealing; however, in their present state of eutrophy they have little recreational value. Extensive improvements, including dredging and shoreline improvement could transform these lakes into recreational assets. Unfortunately such activity would definitely disrupt the existing ecologic systems.

C) Artificial Lakes

The effects that poor management and planning can have on small lakes in areas undergoing urbanization are exemplified by the Vinton Woods Lakes. These three small lakes are located in a high value residential subdivision of east Lafayette in section 15, R4W, T23N. Morphometric data on these lakes also is given in Table 4. Figure 21 illustrates land use and other cultural features in the Vinton Woods watershed in 1968.

Vinton Woods Lakes were constructed in 1954 to enhance the property values of the surrounding residential area which was undergoing development. The adjacent area underwent a construction boom in the early and middle 1960's. Subsequently, the uppermost lake received a great influx of sediment from construction sites upstream. In addition, a private sewage treatment facility in the upper part of the feeder streams' drainage basin was discharging effluent that eventually found its way into the upper lake. By 1973,

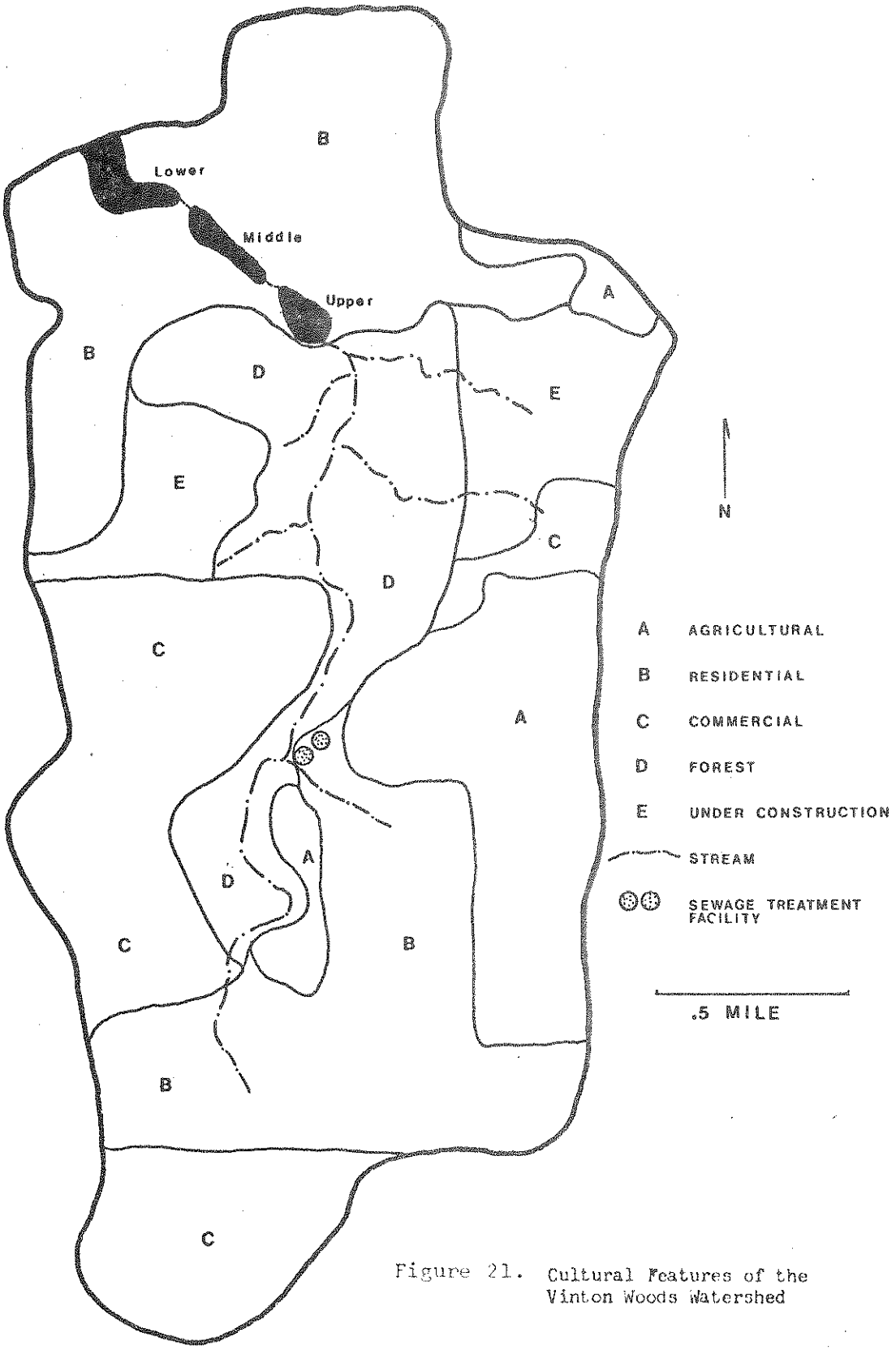


Figure 21. Cultural Features of the Vinton Woods Watershed

the upper lake had been reduced to an unsightly marsh by the influx of sediment and nutrients. The other two lakes were less affected, being downstream in the basin. In short, a lake that was built to enhance property values through aesthetic appeal became a eyesore which detracted greatly from the surrounding area.

The residents of Vinton Woods had the upper lake dredged in 1974 at great expense. Also, a sediment catch basin was constructed at the point where the inlet stream enters the lake. In June, 1977, we surveyed the upper lake to determine the degree of filling since 1974. Home construction had continued in the Vinton Woods area and in the Eastwich area, located in the upper parts of the drainage basin. The sewage treatment facility was no longer operating in 1977. However, even with the sediment catch basin, the upper lake had lost 15-18% of its volume capacity in three years owing to sedimentation. The bathymetric map of the lake, Figure 22, clearly shows a delta of sediments forming in the lake. The water is usually turbid, and trash washed down from the upper basin lines the shore and floats on the surface. In its present condition, the lake has little value to the community and detracts greatly from the scenic quality of the other lakes.

Proper sediment control practices would have greatly reduced the detrimental effect of construction on this lake. The sediment catch basin is too small and too infrequently

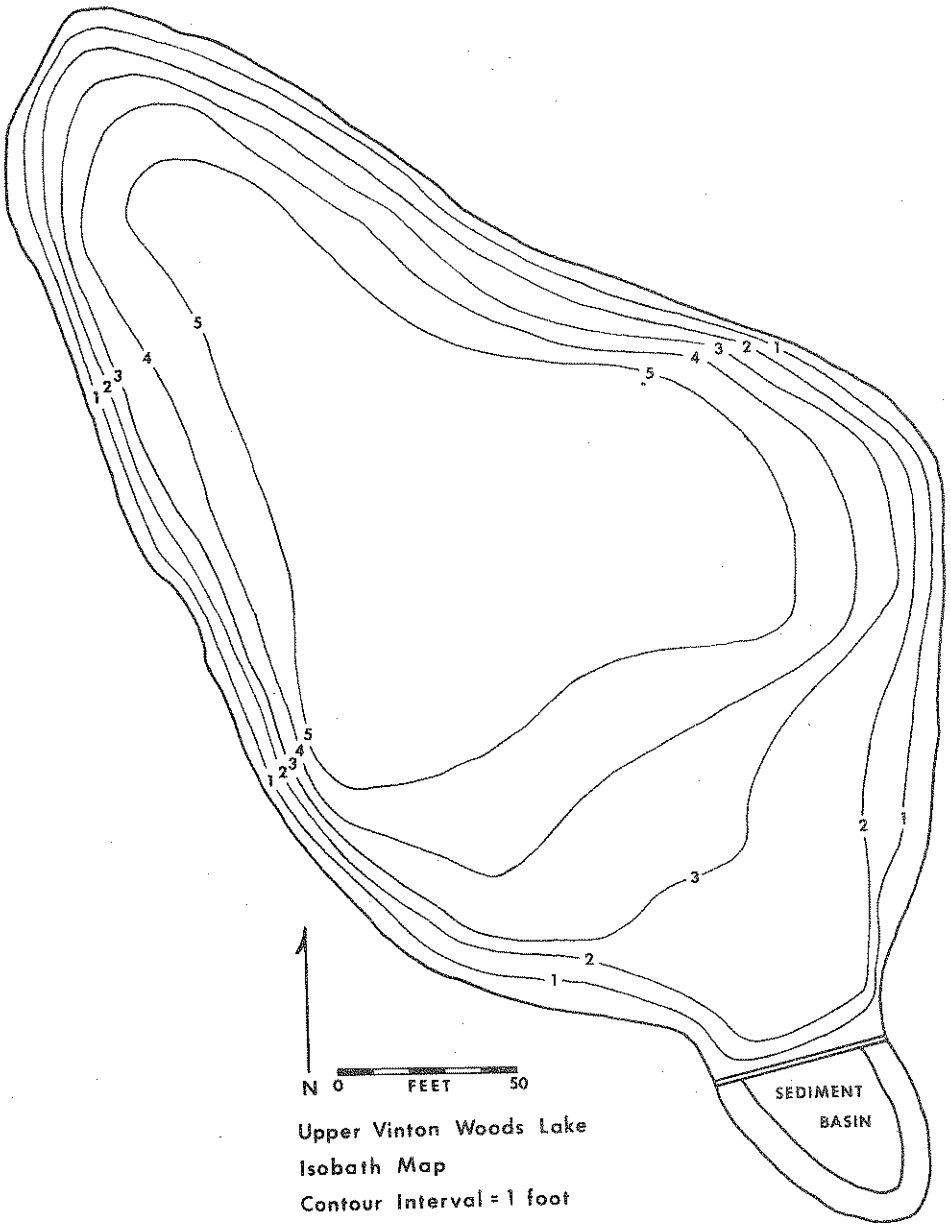

N
0
FEET
50
SEDIMENT
BASIN
Upper Vinton Woods Lake
Isobath Map
Contour Interval = 1 foot

Figure 22.

cleaned to protect the lake from sedimentation. But, more importantly, proper sediment control practices are not being implemented at construction sites.

SUMMARY AND CONCLUSION

Melhorn et al (1974, p. 93) have stated:

> "Geomorphology has been defined as the study of landscape and the geologic forces that produce it. Our scientific studies of the constantly acting dynamic processes that change the "face of the Earth" have tended to ignore the fact that mankind has the power to create aesthetic disruption or destroy the natural landscape. There is a moral burden, then, for those who know something about the natural processes that produce the Earth's scenery and physical environments to use the fundamental constructs of geomorphology and related sciences to 1) find a way to rationally assess the impact of potential human action on the scenic environment, 2) to help protect and preserve the national landscape heritage, and 3) to propose ways to predict and monitor the probable effects of any number of alternative future developments."

The first step in achieving these objectives is to develop a methodology to identify areas of unusual scenic quality. It is then the responsibility of governmental policy-makers to decide the fate of these scenic resources. Past policy of the Federal government, such as the Wilderness Act of 1964, the National Environmental Act of 1969, and the Federal Land Policy and Management Act of 1976, clearly indicates a desire to protect and conserve certain areas of outstanding aesthetic quality. Locally, 83% of the residents of Tippecanoe County that were interviewed indicated a belief that land should be zoned for the protection

of scenery (survey conducted by the Sociology team of this study; Prof. Harry Potter, personal communication).

The purpose of this paper therefore is 1) to devise an objective method to evaluate the scenic resources of landscapes, and 2) apply this methodology to identification of landscapes of unusual beauty in Tippecanoe County. Tippecanoe County was divided into 50 different landscapes based on geomorphic and cultural criteria. Physical, cultural and biologic factors germane to landscape scenery were evaluated by the LAND system of data analysis (Melhorn, et al., 1974) with the objective of effecting comparisons between the landscapes of Tippecanoe County. The concept of uniqueness (Leopold, 1969) was retained in a modified form and various indices were computed to hierarchially rank the scenic characteristics of the different landscapes. Nine landscapes were determined as most scenic in Tippecanoe County. Five of these nine landscapes were stream valleys, although the three most highly ranked landscapes were not characterized by abundant surface water.

In addition, the aesthetic qualities and resource potentials of selected streams and lakes in Tippecanoe County were evaluated quantitatively and qualitatively. Eleven streams were hierarchially ranked by the LAND system in order of scenic quality. The two largest natural lakes in the county were aesthetically evaluated and some recommendations

for their future use were proposed. Vinton Woods lakes were studied to assess the detrimental effects of urbanization on the scenic quality of small ponds.

RECOMMENDATIONS

The aesthetic factors described and analyzed in this report only partly define the total scenic qualities of a given landscape. Further refinement of the biologic and cultural categories (as used herein) is necessary to adequately describe total landscape aesthetics. Inputs from the disciplines of biology, land use evaluation, and urban planning would helpachieve a higher degree of sophistication in aesthetic analysis.

Also, a more desireable level of discrimination between unique and commonplace landscape scenery might be accomplished through enlargement and refinement of the basic matrix (Table 1). This might entail the addition of other pertinent descriptive factors and expansion of the evaluation categories. An enlarged matrix would permit a simultaneous analysis of a greater number of landscapes with highly variable physical, biologic and cultural characteristics.

Finally, the methodology described in this report should be applied to different physiographic regions to test its validity and usefulness. This method of scenic analysis is easily modified to encompass larger regions and areas with scenic characteristics that differ greatly from those found in central Indiana.

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APPENDIX A

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

T	LANDSCAPE T
U	LANDSCAPE U
V	LANDSCAPE V
S	LANDSCAPE S
Y2	LANDSCAPE Y2

Section 1 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION T	U	V	S	Y2
1	CONVEX LANDFORMS	2	1	2	1	2
2	CONCAVE LANDFORMS	5	5	2	2	2
3	DOMINANT LANDFORM TYPE	1	1	1	2	1
4	LANDFORM DIVERSITY	2	4	1	1	4
5	LANDFORM DISTRIBUTION	1	1	5	5	5
6	LANDSCAPE DISCONTINUITIE	4	2	4	2	3
7	FLOODPLAIN DEVELOPMENT	1	1	1	1	1
8	TOTAL RELIEF	1	1	1	2	1
9	LOCAL RELIEF	1	2	1	2	2
10	GROUND SLOPE	1	2	1	2	2
11	CONTOUR FREQUENCY	1	2	1	2	2
12	PANORAMA	2	2	3	3	3
13	DRAINAGE DENSITY	1	4	2	4	5
14	DRAINAGE FREQUENCY	1	3	2	4	5
15	DRAINAGE ORDER	1	1	1	1	2
16	DRAINAGE PATTERN	4	1	1	4	1
17	DRAINAGE TEXTURE	5	2	3	1	2
18	NUMBER OF LAKES	1	1	1	1	5
19	LAKE DISTRIBUTION	3	3	3	3	5
20	NUMBER OF SWAMPS, BOGS	1	1	1	2	1
21	DISTRIB OF SWAMPS, BOGS	3	3	3	1	3
22	PERCENT AREA INDIG VEG	1	3	1	1	4
23	DOMINANT FLORAL TYPE COM	5	2	2	5	2
24	FLORAL DIVERSITY	1	3	3	1	3
25	ORNAMENTAL GENERA	1	1	2	2	1
26	AGRICULTURAL	5	3	4	5	2
27	RESIDENTIAL	1	3	1	1	4
28	COMMERCIAL	1	1	1	1	1
29	INDUSTRIAL	3	1	5	1	2
30	FOREST	1	3	1	1	4
31	MISFITS	1	1	2	1	1
32	QUARRIES , PITS	1	1	1	1	1
33	ROADS, RAILROADS	2	2	2	2	2
34	BUILDING DENSITY	2	2	2	2	2
35	STRUCTURES	2	2	2	2	2
36	POPULATION DENSITY	2	2	2	2	2
37	HISTOR, ARCHEOL SITES	1	2	1	1	2

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	2.	3.	0	0	0
2	CONCAVE LANDFORMS	0	3.	0	0	2.
3	DOMINANT LANDFORM TYPE	4.	1.	0	0	0
4	LANDFORM DIVERSITY	2.	1.	0	2.	0
5	LANDFORM DISTRIBUTION	2.	0	0	0	3.
6	LANDSCAPE DISCONTINUITIE	0	2.	1.	2.	0
7	FLOODPLAIN DEVELOPMENT	5.	0	0	0	0
8	TOTAL RELIEF	4.	1.	0	0	0
9	LOCAL RELIEF	2.	3.	0	0	0
10	GROUND SLOPE	2.	3.	0	0	0
11	CONTOUR FREQUENCY	2.	3.	0	0	0
12	PANORAMA	0	2.	3.	0	0
13	DRAINAGE DENSITY	1.	1.	0	2.	1.
14	DRAINAGE FREQUENCY	1.	1.	1.	1.	1.
15	DRAINAGE ORDER	4.	1.	0	0	0
16	DRAINAGE PATTERN	3.	0	0	2.	0
17	DRAINAGE TEXTURE	1.	2.	1.	0	1.
18	NUMBER OF LAKES	4.	0	0	0	1.
19	LAKE DISTRIBUTION	0	0	4.	0	1.
20	NUMBER OF SWAMPS, BOGS	4.	1.	0	0	0
21	DISTRIB OF SWAMPS, BOGS	1.	0	4.	0	0
22	PERCENT AREA INDIG VEG	3.	0	1.	1.	0
23	DOMINANT FLORAL TYPE COM	0	3.	0	0	2.
24	FLORAL DIVERSITY	2.	0	3.	0	0
25	ORNAMENTAL GENERA	3.	2.	0	0	0
26	AGRICULTURAL	0	1.	1.	1.	2.
27	RESIDENTIAL	3.	0	1.	1.	0
28	COMMERCIAL	5.	0	0	0	0
29	INDUSTRIAL	2.	1.	1.	0	1.
30	FOREST	3.	0	1.	1.	0
31	MISFITS	4.	1.	0	0	0
32	QUARRIES , PITS	5.	0	0	0	0
33	ROADS, RAILROADS	0	5.	0	0	0
34	BUILDING DENSITY	0	5.	0	0	0
35	STRUCTURES	0	5.	0	0	0
36	POPULATION DENSITY	0	5.	0	0	0
37	HISTOR, ARCHEOL SITES	3.	2.	0	0	0

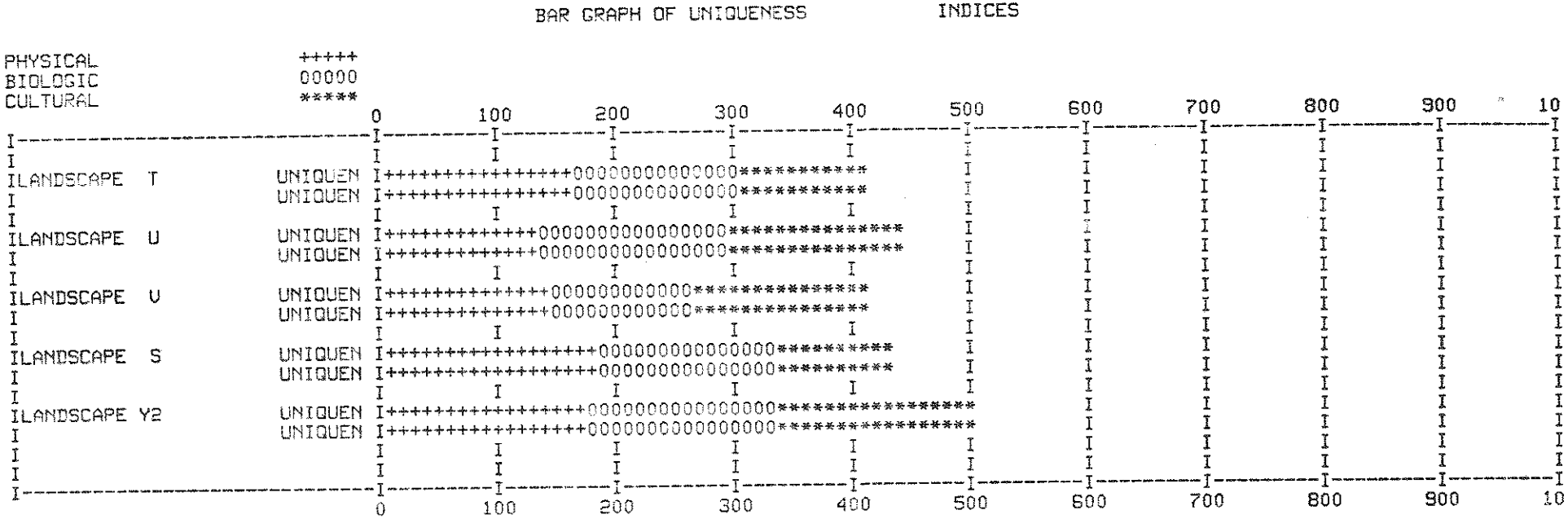
UNIQUENESS MATRIX

			LANDSCAPE LOCATION				
			T	U	V	S	Y2
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	.333	.500	.333	.500	.333
	2	CONCAVE LANDFORMS	.500	.500	.333	.333	.333
	3	DOMINANT LANDFORM TYPE	.250	.250	.250	1.000	.250
	4	LANDFORM DIVERSITY	1.000	.500	.500	.500	.500
	5	LANDFORM DISTRIBUTION	.500	.500	.333	.333	.333
	6	LANDSCAPE DISCONTINUITIE	.500	.500	.500	.500	1.000
	7	FLOODPLAIN DEVELOPMENT	.200	.200	.200	.200	.200
	8	TOTAL RELIEF	.250	.250	.250	1.000	.250
	9	LOCAL RELIEF	.500	.333	.500	.333	.333
	10	GROUND SLOPE	.500	.333	.500	.333	.333
	11	CONTOUR FREQUENCY	.500	.333	.500	.333	.333
	12	PANORAMA	.500	.500	.333	.333	.333
	13	DRAINAGE DENSITY	1.000	.500	1.000	.500	1.000
	14	DRAINAGE FREQUENCY	1.000	1.000	1.000	1.000	1.000
	15	DRAINAGE ORDER	.250	.250	.250	.250	1.000
	16	DRAINAGE PATTERN	.500	.333	.333	.500	.333
	17	DRAINAGE TEXTURE	1.000	.500	1.000	1.000	.500
	18	NUMBER OF LAKES	.250	.250	.250	.250	1.000
	19	LAKE DISTRIBUTION	.250	.250	.250	.250	1.000
	20	NUMBER OF SWAMPS, BOGS	.250	.250	.250	1.000	.250
	21	DISTRIB OF SWAMPS, BOGS	.250	.250	.250	1.000	.250
		SUBTOTAL	10.28	8.28	9.12	11.45	10.87
PHYSICAL	UNIQUENESS	INDICES	163.	131.	145.	182.	172.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	.333	1.000	.333	.333	1.000
	23	DOMINANT FLORAL TYPE COM	.500	.333	.333	.500	.333
	24	FLORAL DIVERSITY	.500	.333	.333	.500	.333
	25	ORNAMENTAL GENERA	.333	.333	.500	.500	.333
		SUBTOTAL	1.67	2.00	1.50	1.83	2.00
BIOLOGIC	UNIQUENESS	INDICES	139.	167.	125.	153.	167.
CULTURAL		FACTORS					
	26	AGRICULTURAL	.500	1.000	1.000	.500	1.000
	27	RESIDENTIAL	.333	1.000	.333	.333	1.000
	28	COMMERCIAL	.200	.200	.200	.200	.200
	29	INDUSTRIAL	1.000	.500	1.000	.500	1.000
	30	FOREST	.333	1.000	.333	.333	1.000
	31	MISFITS	.250	.250	1.000	.250	.250
	32	QUARRIES , PITS	.200	.200	.200	.200	.200
	33	ROADS, RAILROADS	.200	.200	.200	.200	.200
	34	BUILDING DENSITY	.200	.200	.200	.200	.200
	35	STRUCTURES	.200	.200	.200	.200	.200
	36	POPULATION DENSITY	.200	.200	.200	.200	.200
	37	HISTOR, ARCHEOL SITES	.333	.500	.333	.333	.500
		SUBTOTAL	3.95	5.45	5.20	3.45	5.95
CULTURAL	UNIQUENESS	INDICES	110.	151.	144.	96.	165.
		TOTAL	15.90	15.73	15.82	16.73	18.82
TOTALUNIQUENESS		INDICES	412.	450.	414.	430.	504.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE Y2	172.	167.	165.	504.
LANDSCAPE U	131.	167.	151.	450.
LANDSCAPE S	182.	153.	96.	430.
LANDSCAPE U	145.	125.	144.	414.
LANDSCAPE T	163.	139.	110.	412.

BAR GRAPH OF UNIQUENESS INDICES



AESTHETIC MATRIX

		LANDSCAPE LOCATION				
		T	U	V	S	Y2
PHYSICAL	FACTORS					
1	CONVEX LANDFORMS	.333	.500	.333	.500	.333
2	CONCAVE LANDFORMS	.500	.500	.333	.333	.333
3	DOMINANT LANDFORM TYPE	.250	.250	.250	1.000	.250
4	LANDFORM DIVERSITY	1.000	.500	.500	.500	.500
5	LANDFORM DISTRIBUTION	.500	.500	.333	.333	.333
6	LANDSCAPE DISCONTINUITIE	.500	.500	.500	.500	1.000
7	FLOODPLAIN DEVELOPMENT	.200	.200	.200	.200	.200
8	TOTAL RELIEF	.250	.250	.250	1.000	.250
9	LOCAL RELIEF	.500	.333	.500	.333	.333
10	GROUND SLOPE	.500	.333	.500	.333	.333
11	CONTOUR FREQUENCY	.500	.333	.500	.333	.333
12	PANORAMA	.500	.500	.333	.333	.333
13	DRAINAGE DENSITY	1.000	.500	1.000	.500	1.000
14	DRAINAGE FREQUENCY	1.000	1.000	1.000	1.000	1.000
15	DRAINAGE ORDER	.250	.250	.250	.250	1.000
16	DRAINAGE PATTERN	.500	.333	.333	.500	.333
17	DRAINAGE TEXTURE	1.000	.500	1.000	1.000	.500
18	NUMBER OF LAKES	.250	.250	.250	.250	1.000
19	LAKE DISTRIBUTION	.250	.250	.250	.250	1.000
20	NUMBER OF SWAMPS, BOGS	.250	.250	.250	1.000	.250
21	DISTRIB OF SWAMPS, BOGS	.250	.250	.250	1.000	.250
	SUBTOTAL	10.23	8.28	9.12	11.45	10.87
HYSICAL AESTHETIC	INDICES	163.	131.	145.	182.	172.
BIOLOGIC	FACTORS					
22	PERCENT AREA INDIG VEG	.333	1.000	.333	.333	1.000
23	DOMINANT FLORAL TYPE COM	.500	.333	.333	.500	.333
24	FLORAL DIVERSITY	.500	.333	.333	.500	.333
25	ORNAMENTAL GENERA	.333	.333	.500	.500	.333
	SUBTOTAL	1.67	2.00	1.50	1.83	2.00
IOLOGIC AESTHETIC	INDICES	139.	167.	125.	153.	167.
CULTURAL	FACTORS					
26	AGRICULTURAL	.500	1.000	1.000	.500	1.000
27	RESIDENTIAL	.333	0	.333	.333	0
28	COMMERCIAL	.200	.200	.200	.200	.200
29	INDUSTRIAL	0	.500	0	.500	1.000
30	FOREST	.333	1.000	.333	.333	1.000
31	MISFITS	.250	.250	1.000	.250	.250
32	QUARRIES , PITS	.200	.200	.200	.200	.200
33	ROADS, RAILROADS	.200	.200	.200	.200	.200
34	BUILDING DENSITY	.200	.200	.200	.200	.200
35	STRUCTURES	.200	.200	.200	.200	.200
36	POPULATION DENSITY	.200	.200	.200	.200	.200
37	HISTOR, ARCHEOL SITES	0	.500	0	0	.500
	SUBTOTAL	2.62	4.45	3.87	3.12	4.95
JLTURAL AESTHETIC	INDICES	63.	108.	95.	84.	123.
	TOTAL	14.57	14.73	14.48	16.40	17.82
TOTALAESTHETIC	INDICES	365.	406.	364.	418.	463.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE Y2	172.	167.	123.	463.
LANDSCAPE S	182.	153.	84.	418.
LANDSCAPE U	131.	167.	108.	406.
LANDSCAPE T	163.	139.	63.	365.
LANDSCAPE V	145.	125.	95.	364.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

S2	LANDSCAPE S2
V2	LANDSCAPE V2
TR	TIPPE RVR
UW	U WABASH
P2	LANDSCAPE P2
SC	SUGAR CRK

Section 2 landscapes.

LANDSCAPE EVALUATION NUMBERS

FACTOR	LANDSCAPE LOCATION S2	V2	TR	UW	P2	SC
1 CONVEX LANDFORMS	5	2	3	3	2	3
2 CONCAVE LANDFORMS	2	2	4	4	4	3
3 DOMINANT LANDFORM TYPE	3	1	4	4	1	4
4 LANDFORM DIVERSITY	2	1	2	4	1	2
5 LANDFORM DISTRIBUTION	5	5	5	5	5	5
6 LANDSCAPE DISCONTINUITIE	4	4	3	3	1	1
7 FLOODPLAIN DEVELOPMENT	3	1	4	5	1	4
8 TOTAL RELIEF	1	1	3	5	2	3
9 LOCAL RELIEF	1	1	4	5	3	4
10 GROUND SLOPE	1	1	3	4	2	4
11 CONTOUR FREQUENCY	1	1	3	3	2	5
12 PANORAMA	2	3	3	2	3	4
13 DRAINAGE DENSITY	2	3	3	3	5	4
14 DRAINAGE FREQUENCY	1	2	1	2	3	3
15 DRAINAGE ORDER	2	1	5	5	1	3
16 DRAINAGE PATTERN	1	1	5	5	1	1
17 DRAINAGE TEXTURE	4	3	3	3	2	2
18 NUMBER OF LAKES	1	1	2	5	4	2
19 LAKE DISTRIBUTION	3	3	5	5	5	5
20 NUMBER OF SWAMPS, BOGS	1	1	1	5	1	1
21 DISTRIB OF SWAMPS, BOGS	3	3	3	5	1	3
22 PERCENT AREA INDIG VEG	2	2	4	3	4	5
23 DOMINANT FLORAL TYPE COM	2	4	4	2	4	4
24 FLORAL DIVERSITY	3	3	5	5	3	5
25 ORNAMENTAL GENERA	1	1	2	2	2	2
26 AGRICULTURAL	4	4	3	3	3	1
27 RESIDENTIAL	3	3	1	3	3	1
28 COMMERCIAL	1	1	1	1	1	1
29 INDUSTRIAL	1	4	4	2	4	1
30 FOREST	2	2	4	3	4	5
31 MISFITS	1	1	1	1	1	1
32 QUARRIES , PITS	2	2	1	2	2	1
33 ROADS, RAILROADS	2	2	2	2	2	2
34 BUILDING DENSITY	2	2	2	2	2	2
35 STRUCTURES	1	3	2	3	2	2
36 POPULATION DENSITY	2	2	2	2	2	2
37 HISTOR, ARCHEOL SITES	4	1	2	5	1	1

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	0	2.	3.	0	1.
2	CONCAVE LANDFORMS	0	2.	1.	3.	0
3	DOMINANT LANDFORM TYPE	2.	0	1.	3.	0
4	LANDFORM DIVERSITY	2.	3.	0	1.	0
5	LANDFORM DISTRIBUTION	0	0	0	0	5.
6	LANDSCAPE DISCONTINUITIE	2.	0	2.	2.	0
7	FLOODPLAIN DEVELOPMENT	2.	0	1.	2.	1.
8	TOTAL RELIEF	2.	1.	2.	0	1.
9	LOCAL RELIEF	2.	0	1.	2.	1.
10	GROUND SLOPE	2.	1.	1.	2.	0
11	CONTOUR FREQUENCY	2.	1.	2.	0	1.
12	PANORAMA	0	2.	3.	1.	0
13	DRAINAGE DENSITY	0	1.	3.	1.	1.
14	DRAINAGE FREQUENCY	2.	2.	2.	0	0
15	DRAINAGE ORDER	2.	1.	1.	0	2.
16	DRAINAGE PATTERN	4.	0	0	0	2.
17	DRAINAGE TEXTURE	0	2.	3.	1.	0
18	NUMBER OF LAKES	2.	2.	0	1.	1.
19	LAKE DISTRIBUTION	0	0	2.	0	4.
20	NUMBER OF SWAMPS, BOGS	5.	0	0	0	1.
21	DISTRIB OF SWAMPS, BOGS	1.	0	4.	0	1.
22	PERCENT AREA INDIG VEG	0	2.	1.	2.	1.
23	DOMINANT FLORAL TYPE COM	0	2.	0	4.	0
24	FLORAL DIVERSITY	0	0	3.	0	3.
25	ORNAMENTAL GENERA	2.	4.	0	0	0
26	AGRICULTURAL	1.	0	3.	2.	0
27	RESIDENTIAL	2.	0	4.	0	0
28	COMMERCIAL	6.	0	0	0	0
29	INDUSTRIAL	2.	1.	0	3.	0
30	FOREST	0	2.	1.	2.	1.
31	MISFITS	6.	0	0	0	0
32	QUARRIES , PITS	2.	4.	0	0	0
33	ROADS, RAILROADS	0	6.	0	0	0
34	BUILDING DENSITY	0	6.	0	0	0
35	STRUCTURES	1.	3.	2.	0	0
36	POPULATION DENSITY	0	6.	0	0	0
37	HISTOR, ARCHEOL SITES	3.	1.	0	1.	1.

UNIQUENESS MATRIX

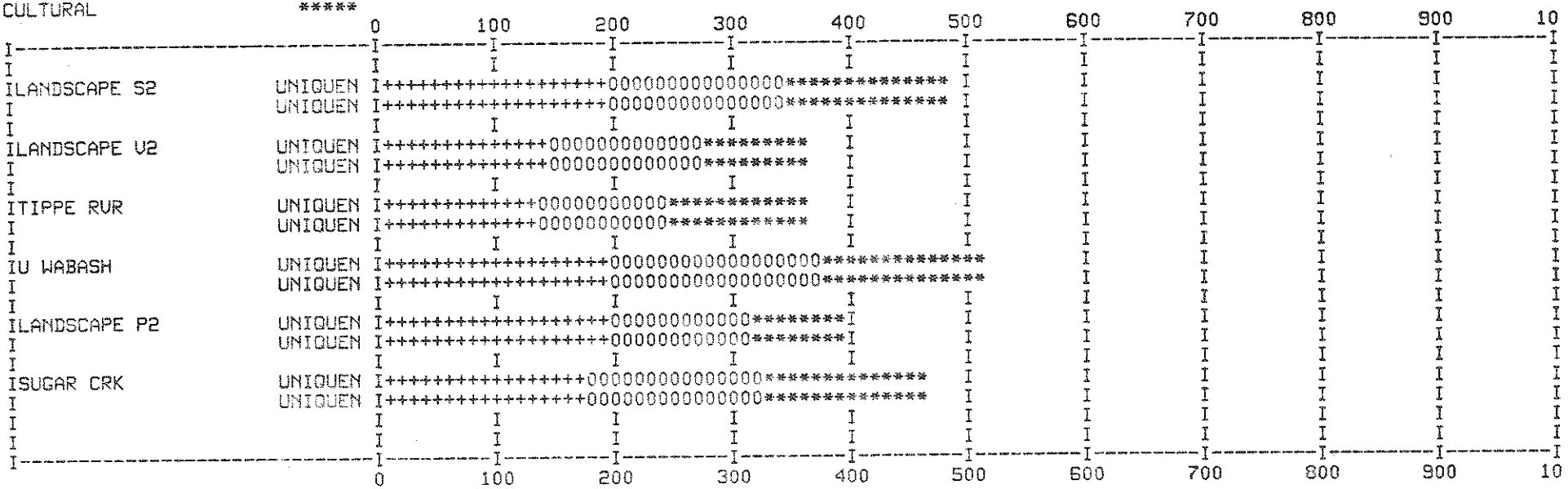
			LANDSCAPE LOCATION					
			S2	V2	TR	UW	P2	SC
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	1.000	.500	.333	.333	.500	.333
	2	CONCAVE LANDFORMS	.500	.500	.333	.333	.333	1.000
	3	DOMINANT LANDFORM TYPE	1.000	.500	.333	.333	.500	.333
	4	LANDFORM DIVERSITY	.333	.500	.333	1.000	.500	.333
	5	LANDFORM DISTRIBUTION	.167	.167	.167	.167	.167	.167
	6	LANDSCAPE DISCONTINUITIE	.500	.500	.500	.500	.500	.500
	7	FLOODPLAIN DEVELOPMENT	1.000	.500	.500	1.000	.500	.500
	8	TOTAL RELIEF	.500	.500	.500	1.000	1.000	.500
	9	LOCAL RELIEF	.500	.500	.500	1.000	1.000	.500
	10	GROUND SLOPE	.500	.500	1.000	.500	1.000	.500
	11	CONTOUR FREQUENCY	.500	.500	.500	.500	1.000	1.000
	12	PANORAMA	.500	.333	.333	.500	.333	1.000
	13	DRAINAGE DENSITY	1.000	.333	.333	.333	1.000	1.000
	14	DRAINAGE FREQUENCY	.500	.500	.500	.500	.500	.500
	15	DRAINAGE ORDER	1.000	.500	.500	.500	.500	1.000
	16	DRAINAGE PATTERN	.250	.250	.500	.500	.250	.250
	17	DRAINAGE TEXTURE	1.000	.333	.333	.333	.500	.500
	18	NUMBER OF LAKES	.500	.500	.500	1.000	1.000	.500
	19	LAKE DISTRIBUTION	.500	.500	.250	.250	.250	.250
	20	NUMBER OF SWAMPS, BOGS	.200	.200	.200	1.000	.200	.200
	21	DISTRIB OF SWAMPS, BOGS	.250	.250	.250	1.000	1.000	.250
		SUBTOTAL	12.20	8.87	8.70	12.58	12.53	11.12
PHYSICAL		UNIQUENESS INDICES	194.	141.	138.	200.	199.	176.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.500	.500	.500	1.000	.500	1.000
	23	DOMINANT FLORAL TYPE COM	.500	.250	.250	.500	.250	.250
	24	FLORAL DIVERSITY	.333	.333	.333	.333	.333	.333
	25	ORNAMENTAL GENERA	.500	.500	.250	.250	.250	.250
		SUBTOTAL	1.83	1.58	1.33	2.08	1.33	1.83
BIOLOGIC		UNIQUENESS INDICES	153.	132.	111.	174.	111.	153.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.500	.500	.333	.333	.333	1.000
	27	RESIDENTIAL	.250	.250	.500	.250	.250	.500
	28	COMMERCIAL	.167	.167	.167	.167	.167	.167
	29	INDUSTRIAL	.500	.333	.333	1.000	.333	.500
	30	FOREST	.500	.500	.500	1.000	.500	1.000
	31	MISFITS	.167	.167	.167	.167	.167	.167
	32	QUARRIES , PITS	.250	.250	.500	.250	.250	.500
	33	ROADS, RAILROADS	.167	.167	.167	.167	.167	.167
	34	BUILDING DENSITY	.167	.167	.167	.167	.167	.167
	35	STRUCTURES	1.000	.500	.333	.500	.333	.333
	36	POPULATION DENSITY	.167	.167	.167	.167	.167	.167
	37	HISTOR, ARCHEOL SITES	1.000	.333	1.000	1.000	.333	.333
		SUBTOTAL	4.83	3.50	4.33	5.17	3.17	5.00
CULTURAL		UNIQUENESS INDICES	134.	97.	120.	144.	88.	139.
		TOTAL	18.87	13.95	14.37	19.83	17.03	17.95
TOTALUNIQUENESS		INDICES	481.	370.	370.	517.	358.	468.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
U WABASH	200.	174.	144.	517.
LANDSCAPE S2	194.	153.	134.	481.
SUGAR CRK	176.	153.	139.	468.
LANDSCAPE P2	199.	111.	88.	398.
LANDSCAPE V2	141.	132.	97.	370.
TIPPE RVR	138.	111.	120.	370.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



AESTHETIC MATRIX

			LANDSCAPE LOCATION					
			S2	V2	TR	UW	P2	SC
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	1.000	.500	.333	.333	.500	.333
	2	CONCAVE LANDFORMS	.500	.500	.333	.333	.333	1.000
	3	DOMINANT LANDFORM TYPE	1.000	.500	.333	.333	.500	.333
	4	LANDFORM DIVERSITY	.333	.500	.333	1.000	.500	.333
	5	LANDFORM DISTRIBUTION	.167	.167	.167	.167	.167	.167
	6	LANDSCAPE DISCONTINUITIE	.500	.500	.500	.500	.500	.500
	7	FLOODPLAIN DEVELOPMENT	1.000	.500	.500	1.000	.500	.500
	8	TOTAL RELIEF	.500	.500	.500	1.000	1.000	.500
	9	LOCAL RELIEF	.500	.500	.500	1.000	1.000	.500
	10	GROUND SLOPE	.500	.500	1.000	.500	1.000	.500
	11	CONTOUR FREQUENCY	.500	.500	.500	.500	1.000	1.000
	12	PANORAMA	.500	.333	.333	.500	.333	1.000
	13	DRAINAGE DENSITY	1.000	.333	.333	.333	1.000	1.000
	14	DRAINAGE FREQUENCY	.500	.500	.500	.500	.500	.500
	15	DRAINAGE ORDER	1.000	.500	.500	.500	.500	1.000
	16	DRAINAGE PATTERN	.250	.250	.500	.500	.250	.250
	17	DRAINAGE TEXTURE	1.000	.333	.333	.333	.500	.500
	18	NUMBER OF LAKES	.500	.500	.500	1.000	1.000	.500
	19	LAKE DISTRIBUTION	.500	.500	.250	.250	.250	.250
	20	NUMBER OF SWAMPS, BOGS	.200	.200	.200	1.000	.200	.200
	21	DISTRIB OF SWAMPS, BOGS	.250	.250	.250	1.000	1.000	.250
		SUBTOTAL	12.20	8.87	8.70	12.58	12.53	11.12
*PHYSICAL	AESTHETIC	INDICES	194.	141.	138.	200.	199.	176.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.500	.500	.500	1.000	.500	1.000
	23	DOMINANT FLORAL TYPE COM	.500	.250	.250	.500	.250	.250
	24	FLORAL DIVERSITY	.333	.333	.333	.333	.333	.333
	25	ORNAMENTAL GENERA	.500	.500	.250	.250	.250	.250
		SUBTOTAL	1.83	1.58	1.33	2.08	1.33	1.83
*BIOLOGIC	AESTHETIC	INDICES	153.	132.	111.	174.	111.	153.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.500	.500	.333	.333	.333	1.000
	27	RESIDENTIAL	0	0	.500	0	0	.500
	28	COMMERCIAL	.167	.167	.167	.167	.167	.167
	29	INDUSTRIAL	.500	0	0	1.000	0	.500
	30	FOREST	.500	.500	.500	1.000	.500	1.000
	31	MISFITS	.167	.167	.167	.167	.167	.167
	32	QUARRIES , PITS	.250	.250	.500	.250	.250	.500
	33	ROADS, RAILROADS	.167	.167	.167	.167	.167	.167
	34	BUILDING DENSITY	.167	.167	.167	.167	.167	.167
	35	STRUCTURES	1.000	0	.333	0	.333	.333
	36	POPULATION DENSITY	.167	.167	.167	.167	.167	.167
	37	HISTOR, ARCHEOL SITES	1.000	0	1.000	1.000	0	0
		SUBTOTAL	4.58	2.08	4.00	4.42	2.25	4.67
*CULTURAL	AESTHETIC	INDICES	126.	42.	109.	115.	53.	123.
		TOTAL	18.62	12.53	14.03	19.08	16.12	17.62
TOTALAESTHETIC		INDICES	472.	315.	358.	489.	363.	453.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
U WABASH	200.	174.	115.	489.
LANDSCAPE S2	194.	153.	126.	472.
SUGAR CRK	176.	153.	123.	453.
LANDSCAPE P2	199.	111.	53.	363.
TIPPE RVR	138.	111.	109.	358.
LANDSCAPE V2	141.	132.	42.	315.

LANDSCAPE AESTETICS.
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

P	LANDSCAPE P
R	LANDSCAPE R
IC	INDIAN CRK
Q	LANDSCAPE Q
O	LANDSCAPE O

Section 3 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR		LANDSCAPE LOCATION P	R	IC	Q	O	
1	CONVEX LANDFORMS	*	1	2	3	5	2	*
2	CONCAVE LANDFORMS	*	2	5	3	5	2	*
3	DOMINANT LANDFORM TYPE	*	1	1	4	1	1	*
4	LANDFORM DIVERSITY	*	1	1	2	1	2	*
5	LANDFORM DISTRIBUTION	*	5	5	5	5	4	*
6	LANDSCAPE DISCONTINUITIE	*	2	4	1	4	2	*
7	FLOODPLAIN DEVELOPMENT	*	4	3	4	1	2	*
8	TOTAL RELIEF	*	1	1	4	1	2	*
9	LOCAL RELIEF	*	2	1	5	1	1	*
10	GROUND SLOPE	*	2	1	4	2	1	*
11	CONTOUR FREQUENCY	*	2	1	5	1	1	*
12	PANORAMA	*	2	1	4	3	3	*
13	DRAINAGE DENSITY	*	2	1	5	2	2	*
14	DRAINAGE FREQUENCY	*	2	1	5	1	2	*
15	DRAINAGE ORDER	*	2	1	3	2	2	*
16	DRAINAGE PATTERN	*	4	4	1	4	1	*
17	DRAINAGE TEXTURE	*	2	5	1	4	3	*
18	NUMBER OF LAKES	*	3	1	2	1	4	*
19	LAKE DISTRIBUTION	*	2	3	5	3	2	*
20	NUMBER OF SWAMPS, BOGS	*	2	1	1	3	3	*
21	DISTRIB OF SWAMPS, BOGS	*	1	3	3	4	1	*
22	PERCENT AREA INDIC VEG	*	3	1	5	2	2	*
23	DOMINANT FLORAL TYPE COM	*	4	5	4	2	2	*
24	FLORAL DIVERSITY	*	5	3	5	3	3	*
25	ORNAMENTAL GENERA	*	2	1	2	2	2	*
26	AGRICULTURAL	*	2	5	1	4	3	*
27	RESIDENTIAL	*	4	1	3	3	3	*
28	COMMERCIAL	*	1	1	1	1	1	*
29	INDUSTRIAL	*	4	3	1	1	5	*
30	FOREST	*	3	1	5	2	2	*
31	MISFITS	*	1	1	2	1	2	*
32	QUARRIES , PITS	*	1	1	2	1	1	*
33	ROADS, RAILROADS	*	3	2	2	3	3	*
34	BUILDING DENSITY	*	2	2	2	3	3	*
35	STRUCTURES	*	2	2	2	3	3	*
36	POPULATION DENSITY	*	2	2	2	3	3	*
37	HISTOR, ARCHEOL SITES	*	3	1	3	4	2	*

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	1.	2.	1.	0	1.
2	CONCAVE LANDFORMS	0	2.	1.	0	2.
3	DOMINANT LANDFORM TYPE	4.	0	0	1.	0
4	LANDFORM DIVERSITY	3.	2.	0	0	0
5	LANDFORM DISTRIBUTION	0	0	0	1.	4.
6	LANDSCAPE DISCONTINUITIE	1.	2.	0	2.	0
7	FLOODPLAIN DEVELOPMENT	1.	1.	1.	2.	0
8	TOTAL RELIEF	3.	1.	0	1.	0
9	LOCAL RELIEF	3.	1.	0	0	1.
10	GROUND SLOPE	2.	2.	0	1.	0
11	CONTOUR FREQUENCY	3.	1.	0	0	1.
12	PANORAMA	1.	1.	2.	1.	0
13	DRAINAGE DENSITY	1.	3.	0	0	1.
14	DRAINAGE FREQUENCY	2.	2.	0	0	1.
15	DRAINAGE ORDER	1.	3.	1.	0	0
16	DRAINAGE PATTERN	2.	0	0	3.	0
17	DRAINAGE TEXTURE	1.	1.	1.	1.	1.
18	NUMBER OF LAKES	2.	1.	1.	1.	0
19	LAKE DISTRIBUTION	0	2.	2.	0	1.
20	NUMBER OF SWAMPS, BOGS	2.	1.	2.	0	0
21	DISTRIB OF SWAMPS, BOGS	2.	0	2.	1.	0
22	PERCENT AREA INDIG VEG	1.	2.	1.	0	1.
23	DOMINANT FLORAL TYPE COM	0	2.	0	2.	1.
24	FLORAL DIVERSITY	0	0	3.	0	2.
25	ORNAMENTAL GENERA	1.	4.	0	0	0
26	AGRICULTURAL	1.	1.	1.	1.	1.
27	RESIDENTIAL	1.	0	3.	1.	0
28	COMMERCIAL	5.	0	0	0	0
29	INDUSTRIAL	2.	0	1.	1.	1.
30	FOREST	1.	2.	1.	0	1.
31	MISFITS	3.	2.	0	0	0
32	QUARRIES , PITS	4.	1.	0	0	0
33	ROADS, RAILROADS	0	2.	3.	0	0
34	BUILDING DENSITY	0	3.	2.	0	0
35	STRUCTURES	0	3.	2.	0	0
36	POPULATION DENSITY	0	3.	2.	0	0
37	HISTOR, ARCHEOL SITES	1.	1.	2.	1.	0

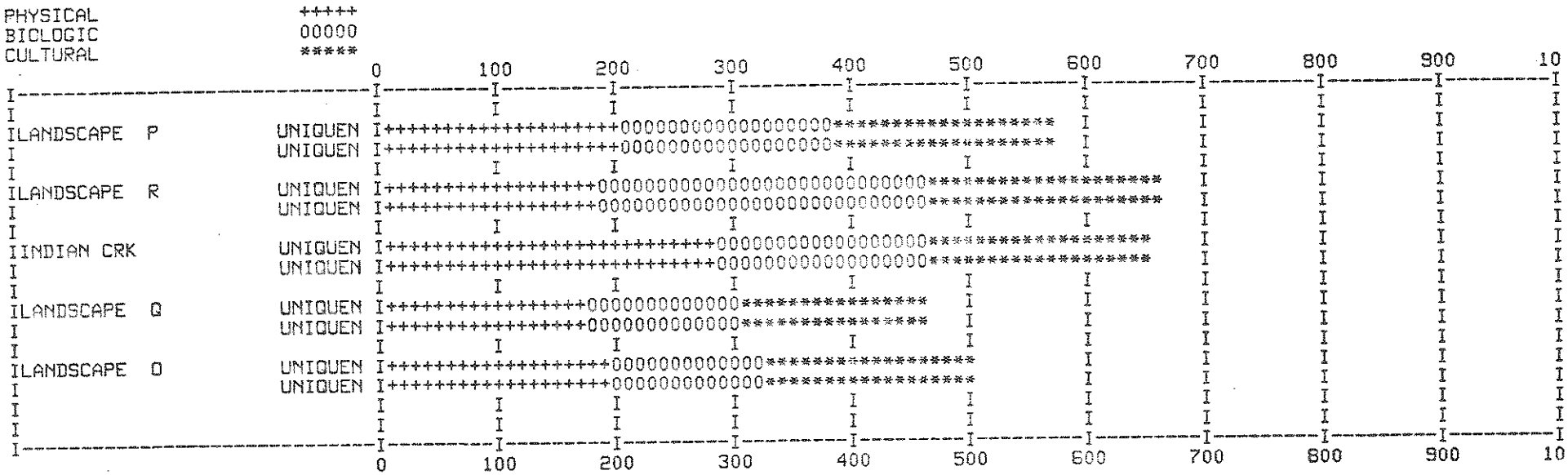
UNIQUENESS MATRIX

			LANDSCAPE LOCATION P	R	IC	Q	O
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	1.000	.500	1.000	1.000	.500
	2	CONCAVE LANDFORMS	.500	.500	1.000	.500	.500
	3	DOMINANT LANDFORM TYPE	.250	.250	1.000	.250	.250
	4	LANDFORM DIVERSITY	.333	.333	.500	.333	.500
	5	LANDFORM DISTRIBUTION	.250	.250	.250	.250	1.000
	6	LANDSCAPE DISCONTINUITIE	.500	.500	1.000	.500	.500
	7	FLOODPLAIN DEVELOPMENT	.500	1.000	.500	1.000	1.000
	8	TOTAL RELIEF	.333	.333	1.000	.333	1.000
	9	LOCAL RELIEF	1.000	.333	1.000	.333	.333
	10	GROUND SLOPE	.500	.500	1.000	.500	.500
	11	CONTOUR FREQUENCY	1.000	.333	1.000	.333	.333
	12	PANORAMA	1.000	1.000	1.000	.500	.500
	13	DRAINAGE DENSITY	.333	1.000	1.000	.333	.333
	14	DRAINAGE FREQUENCY	.500	.500	1.000	.500	.500
	15	DRAINAGE ORDER	.333	1.000	1.000	.333	.333
	16	DRAINAGE PATTERN	.333	.333	.500	.333	.500
	17	DRAINAGE TEXTURE	1.000	1.000	1.000	1.000	1.000
	18	NUMBER OF LAKES	1.000	.500	1.000	.500	1.000
	19	LAKE DISTRIBUTION	.500	.500	1.000	.500	.500
	20	NUMBER OF SWAMPS, BOGS	1.000	.500	.500	.500	.500
	21	DISTRIB OF SWAMPS, BOGS	.500	.500	.500	1.000	.500
		SUBTOTAL	12.67	11.67	17.75	10.83	12.08
PHYSICAL	UNIQUENESS	INDICES	201.	185.	282.	172.	192.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	1.000	1.000	1.000	.500	.500
	23	DOMINANT FLORAL TYPE COM	.500	1.000	.500	.500	.500
	24	FLORAL DIVERSITY	.500	.333	.500	.333	.333
	25	ORNAMENTAL GENERA	.250	1.000	.250	.250	.250
		SUBTOTAL	2.25	3.33	2.25	1.58	1.58
BIOLOGIC	UNIQUENESS	INDICES	188.	278.	188.	132.	132.
CULTURAL		FACTORS					
	26	AGRICULTURAL	1.000	1.000	1.000	1.000	1.000
	27	RESIDENTIAL	1.000	1.000	.333	.333	.333
	28	COMMERCIAL	.200	.200	.200	.200	.200
	29	INDUSTRIAL	1.000	1.000	.500	.500	1.000
	30	FOREST	1.000	1.000	1.000	.500	.500
	31	MISFITS	.333	.333	.500	.333	.500
	32	QUARRIES , PITS	.250	.250	1.000	.250	.250
	33	ROADS, RAILROADS	.333	.500	.500	.333	.333
	34	BUILDING DENSITY	.333	.333	.333	.500	.500
	35	STRUCTURES	.333	.333	.333	.500	.500
	36	POPULATION DENSITY	.333	.333	.333	.500	.500
	37	HISTOR, ARCHEOL SITES	.500	1.000	.500	1.000	1.000
		SUBTOTAL	6.62	7.28	6.53	5.95	6.62
CULTURAL	UNIQUENESS	INDICES	184.	202.	181.	165.	184.
		TOTAL	21.53	22.28	26.53	18.37	20.28
TOTALUNIQUENESS		INDICES	572.	665.	651.	469.	508.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE R	185.	278.	202.	665.
INDIAN CRK	282.	188.	181.	651.
LANDSCAPE P	201.	188.	184.	572.
LANDSCAPE O	192.	132.	184.	508.
LANDSCAPE Q	172.	132.	165.	469.

BAR GRAPH OF UNIQUENESS INDICES



AESTHETIC MATRIX

			LANDSCAPE LOCATION P	R	IC	Q	O
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	1.000	.500	1.000	1.000	.500
	2	CONCAVE LANDFORMS	.500	.500	1.000	.500	.500
	3	DOMINANT LANDFORM TYPE	.250	.250	1.000	.250	.250
	4	LANDFORM DIVERSITY	.333	.333	.500	.333	.500
	5	LANDFORM DISTRIBUTION	.250	.250	.250	.250	1.000
	6	LANDSCAPE DISCONTINUITIE	.500	.500	1.000	.500	.500
	7	FLOODPLAIN DEVELOPMENT	.500	1.000	.500	1.000	1.000
	8	TOTAL RELIEF	.333	.333	1.000	.333	1.000
	9	LOCAL RELIEF	1.000	.333	1.000	.333	.333
	10	GROUND SLOPE	.500	.500	1.000	.500	.500
	11	CONTOUR FREQUENCY	1.000	.333	1.000	.333	.333
	12	PANORAMA	1.000	1.000	1.000	.500	.500
	13	DRAINAGE DENSITY	.333	1.000	1.000	.333	.333
	14	DRAINAGE FREQUENCY	.500	.500	1.000	.500	.500
	15	DRAINAGE ORDER	.333	1.000	1.000	.333	.333
	16	DRAINAGE PATTERN	.333	.333	.500	.333	.500
	17	DRAINAGE TEXTURE	1.000	1.000	1.000	1.000	1.000
	18	NUMBER OF LAKES	1.000	.500	1.000	.500	1.000
	19	LAKE DISTRIBUTION	.500	.500	1.000	.500	.500
	20	NUMBER OF SWAMPS, BOGS	1.000	.500	.500	.500	.500
	21	DISTRIB OF SWAMPS, BOGS	.500	.500	.500	1.000	.500
		SUBTOTAL	12.67	11.67	17.75	10.83	12.08
PHYSICAL	AESTHETIC	INDICES	201.	185.	282.	172.	192.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	1.000	1.000	1.000	.500	.500
	23	DOMINANT FLORAL TYPE COM	.500	1.000	.500	.500	.500
	24	FLORAL DIVERSITY	.500	.333	.500	.333	.333
	25	ORNAMENTAL GENERA	.250	1.000	.250	.250	.250
		SUBTOTAL	2.25	3.33	2.25	1.58	1.58
BIOLOGIC	AESTHETIC	INDICES	188.	278.	188.	132.	132.
CULTURAL		FACTORS					
	26	AGRICULTURAL	1.000	1.000	1.000	1.000	1.000
	27	RESIDENTIAL	0	1.000	0	0	0
	28	COMMERCIAL	.200	.200	.200	.200	.200
	29	INDUSTRIAL	0	0	.500	.500	0
	30	FOREST	1.000	1.000	1.000	.500	.500
	31	MISFITS	.333	.333	.500	.333	.500
	32	QUARRIES , PITS	.250	.250	1.000	.250	.250
	33	ROADS, RAILROADS	0	.500	.500	0	0
	34	BUILDING DENSITY	.333	.333	.333	0	0
	35	STRUCTURES	.333	.333	.333	0	0
	36	POPULATION DENSITY	.333	.333	.333	.500	.500
	37	HISTOR, ARCHEOL SITES	.500	0	.500	1.000	1.000
		SUBTOTAL	4.28	5.28	6.20	4.28	3.95
CULTURAL	AESTHETIC	INDICES	91.	126.	168.	103.	88.
		TOTAL	19.20	20.28	26.20	16.70	17.62
TOTALAESTHETIC		INDICES	479.	589.	637.	407.	412.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
INDIAN CRK	282.	188.	168.	637.
LANDSCAPE R	185.	278.	126.	589.
LANDSCAPE P	201.	188.	91.	479.
LANDSCAPE O	192.	132.	88.	412.
LANDSCAPE Q	172.	132.	103.	407.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

MW	M WABASH
WL	W LAFAYETTE
X2	LANDSCAPE X2
Y	LANDSCAPE Y
W	LANDSCAPE W
X	LANDSCAPE X

Section 4 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION MW	WL	X2	Y	W	X
1	CONVEX LANDFORMS	1	1	2	1	1	2
2	CONCAVE LANDFORMS	4	1	2	4	2	2
3	DOMINANT LANDFORM TYPE	4	3	1	1	5	1
4	LANDFORM DIVERSITY	4	2	1	1	1	1
5	LANDFORM DISTRIBUTION	5	4	5	5	5	5
6	LANDSCAPE DISCONTINUITIE	3	1	2	1	2	2
7	FLOODPLAIN DEVELOPMENT	4	1	1	2	1	1
8	TOTAL RELIEF	4	4	1	3	2	1
9	LOCAL RELIEF	4	3	1	3	3	2
10	GROUND SLOPE	4	3	2	2	2	2
11	CONTOUR FREQUENCY	4	3	2	3	3	2
12	PANORAMA	3	4	3	4	4	4
13	DRAINAGE DENSITY	2	2	3	5	4	4
14	DRAINAGE FREQUENCY	1	1	3	5	4	3
15	DRAINAGE ORDER	5	2	1	1	1	1
16	DRAINAGE PATTERN	5	5	1	1	1	1
17	DRAINAGE TEXTURE	4	4	3	2	2	3
18	NUMBER OF LAKES	3	3	1	1	5	1
19	LAKE DISTRIBUTION	5	2	3	3	5	3
20	NUMBER OF SWAMPS, BOGS	2	1	1	1	2	1
21	DISTRIB OF SWAMPS, BOGS	5	3	3	3	2	3
22	PERCENT AREA INDIG VEG	3	2	2	3	4	3
23	DOMINANT FLORAL TYPE COM	2	4	4	4	4	4
24	FLORAL DIVERSITY	5	5	5	5	5	5
25	ORNAMENTAL GENERA	2	4	2	2	2	2
26	AGRICULTURAL	1	1	4	3	2	3
27	RESIDENTIAL	5	5	4	4	3	4
28	COMMERCIAL	4	5	2	1	1	2
29	INDUSTRIAL	4	4	1	1	1	1
30	FOREST	3	2	2	3	4	3
31	MISFITS	4	3	1	2	2	2
32	QUARRIES , PITS	5	5	1	1	4	2
33	ROADS, RAILROADS	4	4	3	2	2	3
34	BUILDING DENSITY	4	5	3	3	3	4
35	STRUCTURES	4	4	3	2	3	4
36	POPULATION DENSITY	4	5	2	2	2	3
37	HISTOR, ARCHEOL SITES	4	4	2	1	1	3

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	4.	2.	0	0	0
2	CONCAVE LANDFORMS	1.	3.	0	2.	0
3	DOMINANT LANDFORM TYPE	3.	0	1.	1.	1.
4	LANDFORM DIVERSITY	4.	1.	0	1.	0
5	LANDFORM DISTRIBUTION	0	0	0	1.	5.
6	LANDSCAPE DISCONTINUITIE	2.	3.	1.	0	0
7	FLOODPLAIN DEVELOPMENT	4.	1.	0	1.	0
8	TOTAL RELIEF	2.	1.	1.	2.	0
9	LOCAL RELIEF	1.	1.	3.	1.	0
10	GROUND SLOPE	0	4.	1.	1.	0
11	CONTOUR FREQUENCY	0	2.	3.	1.	0
12	PANORAMA	0	0	2.	4.	0
13	DRAINAGE DENSITY	0	2.	1.	2.	1.
14	DRAINAGE FREQUENCY	2.	0	2.	1.	1.
15	DRAINAGE ORDER	4.	1.	0	0	1.
16	DRAINAGE PATTERN	4.	0	0	0	2.
17	DRAINAGE TEXTURE	0	2.	2.	2.	0
18	NUMBER OF LAKES	3.	0	2.	0	1.
19	LAKE DISTRIBUTION	0	1.	3.	0	2.
20	NUMBER OF SWAMPS, BOGS	4.	2.	0	0	0
21	DISTRIB OF SWAMPS, BOGS	0	1.	4.	0	1.
22	PERCENT AREA INDIC VEG	0	2.	3.	1.	0
23	DOMINANT FLORAL TYPE COM	0	1.	0	5.	0
24	FLORAL DIVERSITY	0	0	0	0	6.
25	ORNAMENTAL GENERA	0	5.	0	1.	0
26	AGRICULTURAL	2.	1.	2.	1.	0
27	RESIDENTIAL	0	0	1.	3.	2.
28	COMMERCIAL	2.	2.	0	1.	1.
29	INDUSTRIAL	4.	0	0	2.	0
30	FOREST	0	2.	3.	1.	0
31	MISFITS	1.	3.	1.	1.	0
32	QUARRIES , PITS	2.	1.	0	1.	2.
33	ROADS, RAILROADS	0	2.	2.	2.	0
34	BUILDING DENSITY	0	0	3.	2.	1.
35	STRUCTURES	0	1.	2.	3.	0
36	POPULATION DENSITY	0	3.	1.	1.	1.
37	HISTOR, ARCHEOL SITES	2.	1.	1.	2.	0

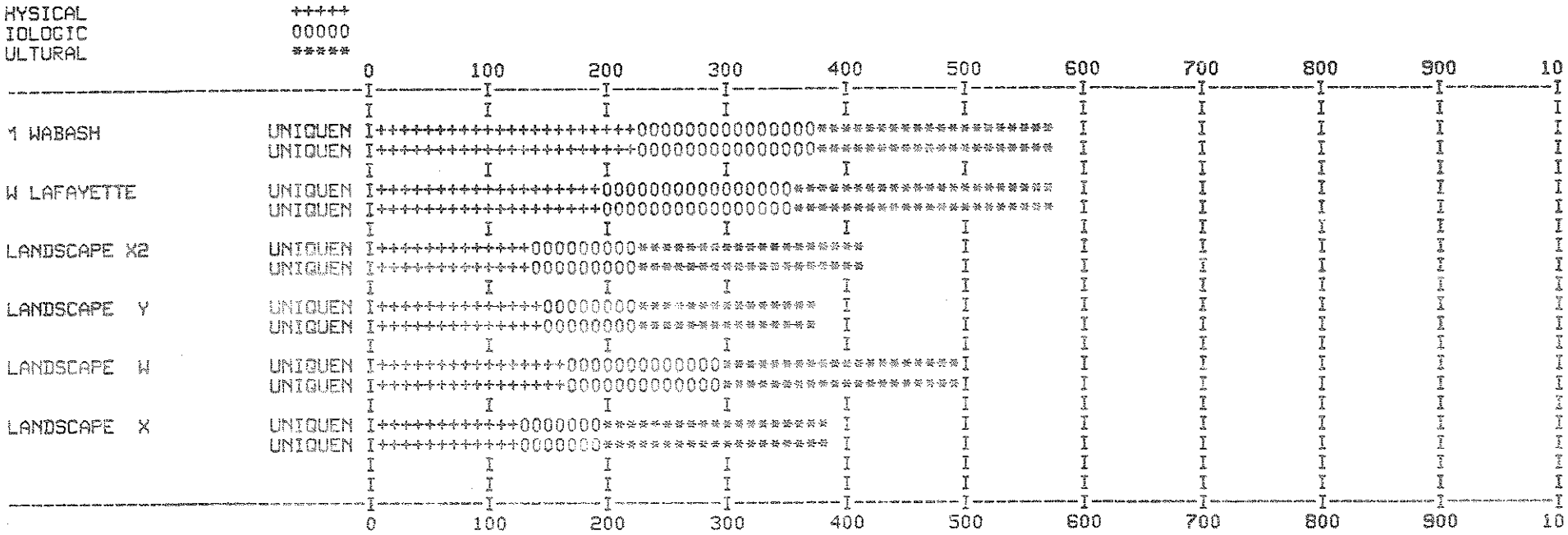
UNIQUENESS MATRIX

			LANDSCAPE LOCATION					
			MW	WL	X2	Y	W	X
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	.250	.250	.500	.250	.250	.500
	2	CONCAVE LANDFORMS	.500	1.000	.333	.500	.333	.333
	3	DOMINANT LANDFORM TYPE	1.000	1.000	.333	.333	1.000	.333
	4	LANDFORM DIVERSITY	1.000	1.000	.250	.250	.250	.250
	5	LANDFORM DISTRIBUTION	.200	1.000	.200	.200	.200	.200
	6	LANDSCAPE DISCONTINUITIE	1.000	.500	.333	.500	.333	.333
	7	FLOODPLAIN DEVELOPMENT	1.000	.250	.250	1.000	.250	.250
	8	TOTAL RELIEF	.500	.500	.500	1.000	1.000	.500
	9	LOCAL RELIEF	1.000	.333	1.000	.333	.333	1.000
	10	GROUND SLOPE	1.000	1.000	.250	.250	.250	.250
	11	CONTOUR FREQUENCY	1.000	.333	.500	.333	.333	.500
	12	PANORAMA	.500	.250	.500	.250	.250	.250
	13	DRAINAGE DENSITY	.500	.500	1.000	1.000	.500	.500
	14	DRAINAGE FREQUENCY	.500	.500	.500	1.000	1.000	.500
	15	DRAINAGE ORDER	1.000	1.000	.250	.250	.250	.250
	16	DRAINAGE PATTERN	.500	.500	.250	.250	.250	.250
	17	DRAINAGE TEXTURE	.500	.500	.500	.500	.500	.500
	18	NUMBER OF LAKES	.500	.500	.333	.333	1.000	.333
	19	LAKE DISTRIBUTION	.500	1.000	.333	.333	.500	.333
	20	NUMBER OF SWAMPS, BOGS	.500	.250	.250	.250	.500	.250
	21	DISTRIB OF SWAMPS, BOGS	1.000	.250	.250	.250	1.000	.250
		SUBTOTAL	14.45	12.42	8.62	9.37	10.28	7.87
PHYSICAL		UNIQUENESS INDICES	229.	197.	137.	149.	163.	125.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.333	.500	.500	.333	1.000	.333
	23	DOMINANT FLORAL TYPE COM	1.000	.200	.200	.200	.200	.200
	24	FLORAL DIVERSITY	.167	.167	.167	.167	.167	.167
	25	ORNAMENTAL GENERA	.200	1.000	.200	.200	.200	.200
		SUBTOTAL	1.70	1.87	1.07	.90	1.57	.90
BIOLOGIC		UNIQUENESS INDICES	142.	156.	89.	75.	131.	75.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.500	.500	1.000	.500	1.000	.500
	27	RESIDENTIAL	.500	.500	.333	.333	1.000	.333
	28	COMMERCIAL	1.000	1.000	.500	.500	.500	.500
	29	INDUSTRIAL	.500	.500	.250	.250	.250	.250
	30	FOREST	.333	.500	.500	.333	1.000	.333
	31	MISFITS	1.000	1.000	1.000	.333	.333	.333
	32	QUARRIES , PITS	.500	.500	.500	.500	1.000	1.000
	33	ROADS, RAILROADS	.500	.500	.500	.500	.500	.500
	34	BUILDING DENSITY	.500	1.000	.333	.333	.333	.500
	35	STRUCTURES	.333	.333	.500	1.000	.500	.333
	36	POPULATION DENSITY	1.000	1.000	.333	.333	.333	1.000
	37	HISTOR, ARCHEOL SITES	.500	.500	1.000	.500	.500	1.000
		SUBTOTAL	7.17	7.83	6.75	5.42	7.25	6.58
CULTURAL		UNIQUENESS INDICES	199.	218.	187.	150.	201.	183.
		TOTAL	23.32	22.12	16.43	15.68	19.10	15.35
TOTALUNIQUENESS		INDICES	570.	570.	413.	374.	495.	383.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
W LAFAYETTE	197.	156.	218.	570.
M WABASH	229.	142.	199.	570.
LANDSCAPE W	163.	131.	201.	495.
LANDSCAPE X2	137.	89.	187.	413.
LANDSCAPE X	125.	75.	183.	383.
LANDSCAPE Y	149.	75.	150.	374.

BAR GRAPH OF UNIQUENESS INDICES



			LANDSCAPE LOCATION					
			MW	WL	X2	Y	W	X
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	.250	.250	.500	.250	.250	.500
	2	CONCAVE LANDFORMS	.500	1.000	.333	.500	.333	.333
	3	DOMINANT LANDFORM TYPE	1.000	1.000	.333	.333	1.000	.333
	4	LANDFORM DIVERSITY	1.000	1.000	.250	.250	.250	.250
	5	LANDFORM DISTRIBUTION	.200	1.000	.200	.200	.200	.200
	6	LANDSCAPE DISCONTINUITIE	1.000	.500	.333	.500	.333	.333
	7	FLOODPLAIN DEVELOPMENT	1.000	.250	.250	1.000	.250	.250
	8	TOTAL RELIEF	.500	.500	.500	1.000	1.000	.500
	9	LOCAL RELIEF	1.000	.333	1.000	.333	.333	1.000
	10	GROUND SLOPE	1.000	1.000	.250	.250	.250	.250
	11	CONTOUR FREQUENCY	1.000	.333	.500	.333	.333	.500
	12	PANORAMA	.500	.250	.500	.250	.250	.250
	13	DRAINAGE DENSITY	.500	.500	1.000	1.000	.500	.500
	14	DRAINAGE FREQUENCY	.500	.500	.500	1.000	1.000	.500
	15	DRAINAGE ORDER	1.000	1.000	.250	.250	.250	.250
	16	DRAINAGE PATTERN	.500	.500	.250	.250	.250	.250
	17	DRAINAGE TEXTURE	.500	.500	.500	.500	.500	.500
	18	NUMBER OF LAKES	.500	.500	.333	.333	1.000	.333
	19	LAKE DISTRIBUTION	.500	1.000	.333	.333	.500	.333
	20	NUMBER OF SWAMPS, BOGS	.500	.250	.250	.250	.500	.250
	21	DISTRIB OF SWAMPS, BOGS	1.000	.250	.250	.250	1.000	.250
		SUBTOTAL	14.45	12.42	8.62	9.37	10.28	7.87
PHYSICAL	AESTHETIC	INDICES	229.	197.	137.	149.	163.	125.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.333	.500	.500	.333	1.000	.333
	23	DOMINANT FLORAL TYPE COM	1.000	.200	.200	.200	.200	.200
	24	FLORAL DIVERSITY	.167	.167	.167	.167	.167	.167
	25	ORNAMENTAL GENERA	.200	1.000	.200	.200	.200	.200
		SUBTOTAL	1.70	1.87	1.07	.90	1.57	.90
BIOLOGIC	AESTHETIC	INDICES	142.	156.	89.	75.	131.	75.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.500	.500	1.000	.500	1.000	.500
	27	RESIDENTIAL	0	0	0	0	0	0
	28	COMMERCIAL	0	0	.500	.500	.500	.500
	29	INDUSTRIAL	0	0	.250	.250	.250	.250
	30	FOREST	.333	.500	.500	.333	1.000	.333
	31	MISFITS	0	0	1.000	.333	.333	.333
	32	QUARRIES , PITS	0	0	.500	.500	0	1.000
	33	ROADS, RAILROADS	0	0	0	.500	.500	0
	34	BUILDING DENSITY	0	0	0	0	0	0
	35	STRUCTURES	0	0	0	1.000	0	0
	36	POPULATION DENSITY	0	0	.333	.333	.333	1.000
	37	HISTOR, ARCHEOL SITES	.500	.500	1.000	0	0	1.000
		SUBTOTAL	1.33	1.50	5.08	4.25	3.92	4.92
CULTURAL	AESTHETIC	INDICES	16.	16.	128.	112.	74.	130.
		TOTAL	17.48	15.78	14.77	14.52	15.77	13.68
TOTALAESTHETIC		INDICES	387.	369.	354.	336.	367.	330.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
WABASH	229.	142.	16.	387.
LAFAYETTE	197.	156.	16.	369.
ANDSCAPE W	163.	131.	74.	367.
ANDSCAPE X2	137.	89.	128.	354.
ANDSCAPE Y	149.	75.	112.	336.
ANDSCAPE X	125.	75.	130.	330.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

MW	M WILDCAT CRK
S3	LANDSCAPE S3
O2	LANDSCAPE O2
NW	N WLDCT CRK
N2	LANDSCAPE N2

Section 5 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION MW	S3	O2	NW	N2
1	CONVEX LANDFORMS	3	5	5	3	5
2	CONCAVE LANDFORMS	1	2	5	3	2
3	DOMINANT LANDFORM TYPE	4	3	1	4	1
4	LANDFORM DIVERSITY	2	1	1	2	1
5	LANDFORM DISTRIBUTION	5	3	5	5	5
6	LANDSCAPE DISCONTINUITIE	1	4	3	1	4
7	FLOODPLAIN DEVELOPMENT	4	1	2	4	3
8	TOTAL RELIEF	3	1	2	3	1
9	LOCAL RELIEF	4	1	1	5	1
10	GROUND SLOPE	3	1	1	4	1
11	CONTOUR FREQUENCY	4	1	2	4	1
12	PANORAMA	4	2	2	3	2
13	DRAINAGE DENSITY	3	1	2	4	3
14	DRAINAGE FREQUENCY	2	1	1	3	2
15	DRAINAGE ORDER	3	1	2	5	1
16	DRAINAGE PATTERN	1	1	1	1	1
17	DRAINAGE TEXTURE	3	3	4	3	3
18	NUMBER OF LAKES	1	1	3	2	3
19	LAKE DISTRIBUTION	3	3	4	5	1
20	NUMBER OF SWAMPS, BOGS	1	1	1	1	4
21	DISTRIB OF SWAMPS, BOGS	3	3	1	3	2
22	PERCENT AREA INDIG VEG	5	2	3	4	2
23	DOMINANT FLORAL TYPE COM	4	2	2	4	2
24	FLORAL DIVERSITY	5	3	3	5	3
25	ORNAMENTAL GENERA	2	2	1	3	1
26	AGRICULTURAL	1	4	4	2	4
27	RESIDENTIAL	1	3	4	1	4
28	COMMERCIAL	1	2	1	1	1
29	INDUSTRIAL	1	1	1	2	2
30	FOREST	5	1	3	4	2
31	MISFITS	1	2	2	1	1
32	QUARRIES , PITS	2	1	1	4	1
33	ROADS, RAILROADS	2	2	2	2	2
34	BUILDING DENSITY	2	2	2	2	2
35	STRUCTURES	2	2	2	2	2
36	POPULATION DENSITY	2	2	2	2	2
37	HISTOR, ARCHEOL SITES	3	1	1	4	1

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	0	0	2.	0	3.
2	CONCAVE LANDFORMS	1.	2.	1.	0	1.
3	DOMINANT LANDFORM TYPE	2.	0	1.	2.	0
4	LANDFORM DIVERSITY	3.	2.	0	0	0
5	LANDFORM DISTRIBUTION	0	0	1.	0	4.
6	LANDSCAPE DISCONTINUITIE	2.	0	1.	2.	0
7	FLOODPLAIN DEVELOPMENT	1.	1.	1.	2.	0
8	TOTAL RELIEF	2.	1.	2.	0	0
9	LOCAL RELIEF	3.	0	0	1.	1.
10	GROUND SLOPE	3.	0	1.	1.	0
11	CONTOUR FREQUENCY	2.	1.	0	2.	0
12	PANORAMA	0	3.	1.	1.	0
13	DRAINAGE DENSITY	1.	1.	2.	1.	0
14	DRAINAGE FREQUENCY	2.	2.	1.	0	0
15	DRAINAGE ORDER	2.	1.	1.	0	1.
16	DRAINAGE PATTERN	5.	0	0	0	0
17	DRAINAGE TEXTURE	0	0	4.	1.	0
18	NUMBER OF LAKES	2.	1.	2.	0	0
19	LAKE DISTRIBUTION	1.	0	2.	1.	1.
20	NUMBER OF SWAMPS, BOGS	4.	0	0	1.	0
21	DISTRIB OF SWAMPS, BOGS	1.	1.	3.	0	0
22	PERCENT AREA INDIC VEG	0	2.	1.	1.	1.
23	DOMINANT FLORAL TYPE COM	0	3.	0	2.	0
24	FLORAL DIVERSITY	0	0	3.	0	2.
25	ORNAMENTAL GENERA	2.	2.	1.	0	0
26	AGRICULTURAL	1.	1.	0	3.	0
27	RESIDENTIAL	2.	0	1.	2.	0
28	COMMERCIAL	4.	1.	0	0	0
29	INDUSTRIAL	3.	2.	0	0	0
30	FOREST	1.	1.	1.	1.	1.
31	MISFITS	3.	2.	0	0	0
32	QUARRIES , PITS	3.	1.	0	1.	0
33	ROADS, RAILROADS	0	5.	0	0	0
34	BUILDING DENSITY	0	5.	0	0	0
35	STRUCTURES	0	5.	0	0	0
36	POPULATION DENSITY	0	5.	0	0	0
37	HISTOR, ARCHEOL SITES	3.	0	1.	1.	0

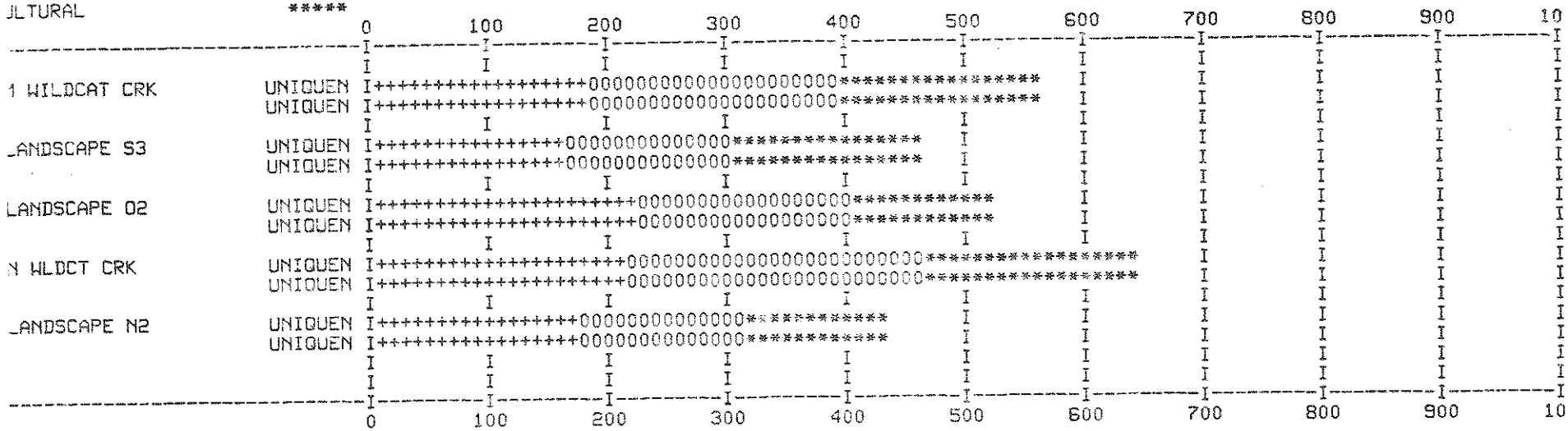
UNIQUENESS 140 MATRIX

			LANDSCAPE LOCATION MW	S3	O2	NW	N2
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	.500	.333	.333	.500	.333
	2	CONCAVE LANDFORMS	1.000	.500	1.000	1.000	.500
	3	DOMINANT LANDFORM TYPE	.500	1.000	.500	.500	.500
	4	LANDFORM DIVERSITY	.500	.333	.333	.500	.333
	5	LANDFORM DISTRIBUTION	.250	1.000	.250	.250	.250
	6	LANDSCAPE DISCONTINUITIE	.500	.500	1.000	.500	.500
	7	FLOODPLAIN DEVELOPMENT	.500	1.000	1.000	.500	1.000
	8	TOTAL RELIEF	.500	.500	1.000	.500	.500
	9	LOCAL RELIEF	1.000	.333	.333	1.000	.333
	10	GROUND SLOPE	1.000	.333	.333	1.000	.333
	11	CONTOUR FREQUENCY	.500	.500	1.000	.500	.500
	12	PANORAMA	1.000	.333	.333	1.000	.333
	13	DRAINAGE DENSITY	.500	1.000	1.000	1.000	.500
	14	DRAINAGE FREQUENCY	.500	.500	.500	1.000	.500
	15	DRAINAGE ORDER	1.000	.500	1.000	1.000	.500
	16	DRAINAGE PATTERN	.200	.200	.200	.200	.200
	17	DRAINAGE TEXTURE	.250	.250	1.000	.250	.250
	18	NUMBER OF LAKES	.500	.500	.500	1.000	.500
	19	LAKE DISTRIBUTION	.500	.500	1.000	1.000	1.000
	20	NUMBER OF SWAMPS, BOGS	.250	.250	.250	.250	1.000
	21	DISTRIB OF SWAMPS, BOGS	.333	.333	1.000	.333	1.000
		SUBTOTAL	11.78	10.70	13.87	13.78	10.87
PHYSICAL		UNIQUENESS INDICES	187.	170.	220.	219.	172.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	1.000	.500	1.000	1.000	.500
	23	DOMINANT FLORAL TYPE COM	.500	.333	.333	.500	.333
	24	FLORAL DIVERSITY	.500	.333	.333	.500	.333
	25	ORNAMENTAL GENERA	.500	.500	.500	1.000	.500
		SUBTOTAL	2.50	1.67	2.17	3.00	1.67
BIOLOGIC		UNIQUENESS INDICES	208.	139.	181.	250.	139.
CULTURAL		FACTORS					
	26	AGRICULTURAL	1.000	.333	.333	1.000	.333
	27	RESIDENTIAL	.500	1.000	.500	.500	.500
	28	COMMERCIAL	.250	1.000	.250	.250	.250
	29	INDUSTRIAL	.333	.333	.333	.500	.500
	30	FOREST	1.000	1.000	1.000	1.000	1.000
	31	MISFITS	.333	.500	.500	.333	.333
	32	QUARRIES , PITS	1.000	.333	.333	1.000	.333
	33	ROADS, RAILROADS	.200	.200	.200	.200	.200
	34	BUILDING DENSITY	.200	.200	.200	.200	.200
	35	STRUCTURES	.200	.200	.200	.200	.200
	36	POPULATION DENSITY	.200	.200	.200	.200	.200
	37	HISTOR, ARCHEOL SITES	1.000	.333	.333	1.000	.333
		SUBTOTAL	6.22	5.63	4.38	6.38	4.38
CULTURAL		UNIQUENESS INDICES	173.	156.	122.	177.	122.
		TOTAL	20.50	18.00	20.42	23.17	16.92
TOTALUNIQUENESS		INDICES	568.	465.	522.	646.	433.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
N WLDCT CRK	219.	250.	177.	646.
M WILDCAT CRK	187.	208.	173.	568.
LANDSCAPE 02	220.	181.	122.	522.
LANDSCAPE S3	170.	139.	156.	465.
LANDSCAPE N2	172.	139.	122.	433.

BAR GRAPH OF UNIQUENESS INDICES



AESTHETIC MATRIX

		LANDSCAPE LOCATION				
		MW	S3	02	NW	N2
PHYSICAL	FACTORS					
1	CONVEX LANDFORMS	.500	.333	.333	.500	.333
2	CONCAVE LANDFORMS	1.000	.500	1.000	1.000	.500
3	DOMINANT LANDFORM TYPE	.500	1.000	.500	.500	.500
4	LANDFORM DIVERSITY	.500	.333	.333	.500	.333
5	LANDFORM DISTRIBUTION	.250	1.000	.250	.250	.250
6	LANDSCAPE DISCONTINUITIE	.500	.500	1.000	.500	.500
7	FLOODPLAIN DEVELOPMENT	.500	1.000	1.000	.500	1.000
8	TOTAL RELIEF	.500	.500	1.000	.500	.500
9	LOCAL RELIEF	1.000	.333	.333	1.000	.333
10	GROUND SLOPE	1.000	.333	.333	1.000	.333
11	CONTOUR FREQUENCY	.500	.500	1.000	.500	.500
12	PANORAMA	1.000	.333	.333	1.000	.333
13	DRAINAGE DENSITY	.500	1.000	1.000	1.000	.500
14	DRAINAGE FREQUENCY	.500	.500	.500	1.000	.500
15	DRAINAGE ORDER	1.000	.500	1.000	1.000	.500
16	DRAINAGE PATTERN	.200	.200	.200	.200	.200
17	DRAINAGE TEXTURE	.250	.250	1.000	.250	.250
18	NUMBER OF LAKES	.500	.500	.500	1.000	.500
19	LAKE DISTRIBUTION	.500	.500	1.000	1.000	1.000
20	NUMBER OF SWAMPS, BOGS	.250	.250	.250	.250	1.000
21	DISTRIB OF SWAMPS, BOGS	.333	.333	1.000	.333	1.000
	SUBTOTAL	11.78	10.70	13.87	13.78	10.87
PHYSICAL AESTHETIC	INDICES	187.	170.	220.	219.	172.
BIOLOGIC	FACTORS					
22	PERCENT AREA INDIG VEG	1.000	.500	1.000	1.000	.500
23	DOMINANT FLORAL TYPE COM	.500	.333	.333	.500	.333
24	FLORAL DIVERSITY	.500	.333	.333	.500	.333
25	ORNAMENTAL GENERA	.500	.500	.500	1.000	.500
	SUBTOTAL	2.50	1.67	2.17	3.00	1.67
IOLOGIC AESTHETIC	INDICES	208.	139.	181.	250.	139.
CULTURAL	FACTORS					
26	AGRICULTURAL	1.000	.333	.333	1.000	.333
27	RESIDENTIAL	.500	0	0	.500	0
28	COMMERCIAL	.250	1.000	.250	.250	.250
29	INDUSTRIAL	.333	.333	.333	.500	.500
30	FOREST	1.000	1.000	1.000	1.000	1.000
31	MISFITS	.333	.500	.500	.333	.333
32	QUARRIES , PITS	1.000	.333	.333	0	.333
33	ROADS, RAILROADS	.200	.200	.200	.200	.200
34	BUILDING DENSITY	.200	.200	.200	.200	.200
35	STRUCTURES	.200	.200	.200	.200	.200
36	POPULATION DENSITY	.200	.200	.200	.200	.200
37	HISTOR, ARCHEOL SITES	1.000	0	0	1.000	0
	SUBTOTAL	6.22	4.30	3.55	5.38	3.55
CULTURAL AESTHETIC	INDICES	173.	108.	88.	137.	68.
	TOTAL	20.50	16.67	19.58	22.17	16.08
TOTALAESTHETIC	INDICES	568.	417.	489.	606.	400.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
N WLDCT CRK	219.	250.	137.	606.
M WILDCAT CRK	187.	208.	173.	568.
LANDSCAPE 02	220.	181.	88.	489.
LANDSCAPE S3	170.	139.	108.	417.
LANDSCAPE N2	172.	139.	88.	400.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

D	LANDSCAPE D
WC	WEA CRK
FC	FLINT CRK
N	LANDSCAPE N
A2	LANDSCAPE A2
LW	L WABASH

Section 6 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION D	WC	FC	N	A2	LW
1	CONVEX LANDFORMS	1	1	1	5	1	3
2	CONCAVE LANDFORMS	2	2	1	5	2	1
3	DOMINANT LANDFORM TYPE	2	4	4	3	2	4
4	LANDFORM DIVERSITY	5	2	1	2	2	4
5	LANDFORM DISTRIBUTION	4	5	5	4	1	5
6	LANDSCAPE DISCONTINUITIE	1	1	1	2	4	1
7	FLOODPLAIN DEVELOPMENT	2	4	1	3	2	5
8	TOTAL RELIEF	5	3	4	2	3	4
9	LOCAL RELIEF	3	4	4	1	3	5
10	GROUND SLOPE	3	3	5	1	3	5
11	CONTOUR FREQUENCY	3	3	4	1	4	3
12	PANORAMA	3	4	5	1	2	3
13	DRAINAGE DENSITY	1	2	3	1	2	4
14	DRAINAGE FREQUENCY	4	3	2	1	2	2
15	DRAINAGE ORDER	1	3	3	1	2	5
16	DRAINAGE PATTERN	1	5	1	1	3	1
17	DRAINAGE TEXTURE	2	3	3	5	2	3
18	NUMBER OF LAKES	3	2	1	1	1	2
19	LAKE DISTRIBUTION	2	5	3	1	1	5
20	NUMBER OF SWAMPS, BOGS	5	1	1	4	1	5
21	DISTRIB OF SWAMPS, BOGS	4	3	3	1	1	5
22	PERCENT AREA INDIG VEG	3	4	5	1	1	4
23	DOMINANT FLORAL TYPE COM	4	4	4	2	4	4
24	FLORAL DIVERSITY	3	5	5	3	3	5
25	ORNAMENTAL GENERA	2	3	2	2	2	2
26	AGRICULTURAL	3	2	1	5	4	3
27	RESIDENTIAL	3	1	1	1	1	1
28	COMMERCIAL	1	1	1	1	1	1
29	INDUSTRIAL	2	2	1	1	1	2
30	FOREST	3	4	5	1	1	4
31	MISFITS	1	2	1	1	1	1
32	QUARRIES , PITS	5	3	1	1	1	5
33	ROADS, RAILROADS	2	2	1	2	3	2
34	BUILDING DENSITY	3	2	2	2	3	2
35	STRUCTURES	2	2	2	2	4	2
36	POPULATION DENSITY	3	2	2	2	3	2
37	HISTOR, ARCHEOL SITES	3	5	1	5	2	5

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	4.	0	1.	0	1.
2	CONCAVE LANDFORMS	2.	3.	0	0	1.
3	DOMINANT LANDFORM TYPE	0	2.	1.	3.	0
4	LANDFORM DIVERSITY	1.	3.	0	1.	1.
5	LANDFORM DISTRIBUTION	1.	0	0	2.	3.
6	LANDSCAPE DISCONTINUITIE	4.	1.	0	1.	0
7	FLOODPLAIN DEVELOPMENT	1.	2.	1.	1.	1.
8	TOTAL RELIEF	0	1.	2.	2.	1.
9	LOCAL RELIEF	1.	0	2.	2.	1.
10	GROUND SLOPE	1.	0	3.	0	2.
11	CONTOUR FREQUENCY	1.	0	3.	2.	0
12	PANORAMA	1.	1.	2.	1.	1.
13	DRAINAGE DENSITY	2.	2.	1.	1.	0
14	DRAINAGE FREQUENCY	1.	3.	1.	1.	0
15	DRAINAGE ORDER	2.	1.	2.	0	1.
16	DRAINAGE PATTERN	4.	0	1.	0	1.
17	DRAINAGE TEXTURE	0	2.	3.	0	1.
18	NUMBER OF LAKES	3.	2.	1.	0	0
19	LAKE DISTRIBUTION	2.	1.	1.	0	2.
20	NUMBER OF SWAMPS, BOGS	3.	0	0	1.	2.
21	DISTRIB OF SWAMPS, BOGS	2.	0	2.	1.	1.
22	PERCENT AREA INDIG VEG	2.	0	1.	2.	1.
23	DOMINANT FLORAL TYPE COM	0	1.	0	5.	0
24	FLORAL DIVERSITY	0	0	3.	0	3.
25	ORNAMENTAL GENERA	0	5.	1.	0	0
26	AGRICULTURAL	1.	1.	2.	1.	1.
27	RESIDENTIAL	5.	0	1.	0	0
28	COMMERCIAL	6.	0	0	0	0
29	INDUSTRIAL	3.	3.	0	0	0
30	FOREST	2.	0	1.	2.	1.
31	MISFITS	5.	1.	0	0	0
32	QUARRIES , PITS	3.	0	1.	0	2.
33	ROADS, RAILROADS	1.	4.	1.	0	0
34	BUILDING DENSITY	0	4.	2.	0	0
35	STRUCTURES	0	5.	0	1.	0
36	POPULATION DENSITY	0	4.	2.	0	0
37	HISTOR, ARCHEOL SITES	1.	1.	1.	0	3.

UNIQUENESS MATRIX

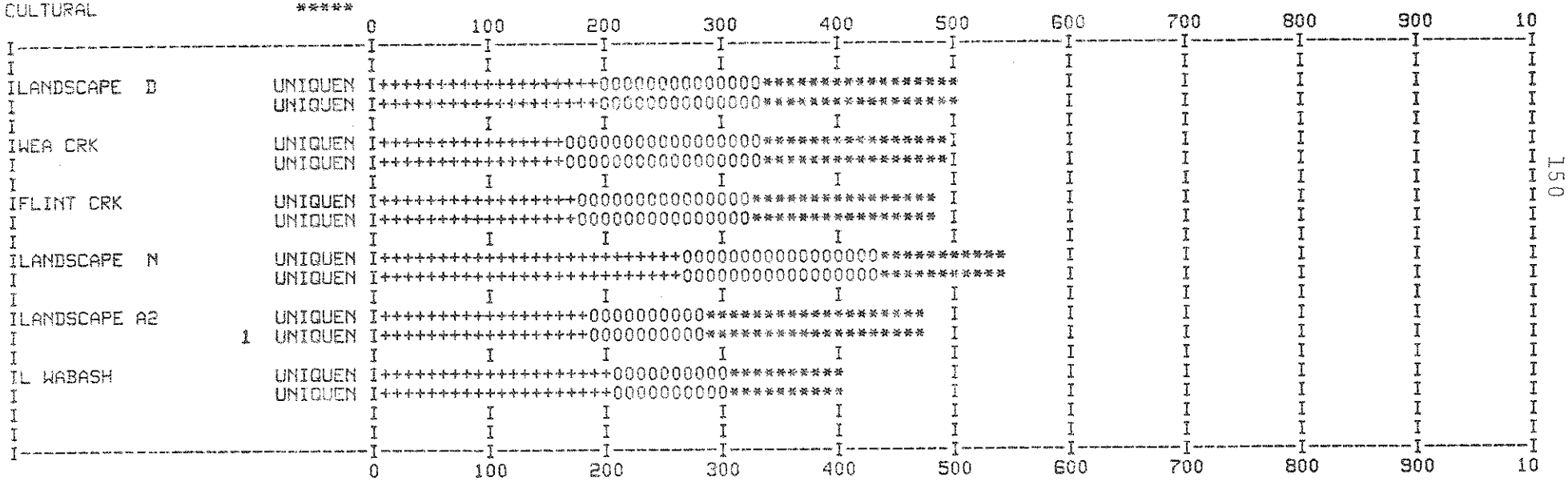
			LANDSCAPE LOCATION					
			D	WC	FC	N	A2	LW
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	.250	.250	.250	1.000	.250	1.000
	2	CONCAVE LANDFORMS	.333	.333	.500	1.000	.333	.500
	3	DOMINANT LANDFORM TYPE	.500	.333	.333	1.000	.500	.333
	4	LANDFORM DIVERSITY	1.000	.333	1.000	.333	.333	1.000
	5	LANDFORM DISTRIBUTION	.500	.333	.333	.500	1.000	.333
	6	LANDSCAPE DISCONTINUITIE	.250	.250	.250	1.000	1.000	.250
	7	FLOODPLAIN DEVELOPMENT	.500	1.000	1.000	1.000	.500	1.000
	8	TOTAL RELIEF	1.000	.500	.500	1.000	.500	.500
	9	LOCAL RELIEF	.500	.500	.500	1.000	.500	1.000
	10	GROUND SLOPE	.333	.333	.500	1.000	.333	.500
	11	CONTOUR FREQUENCY	.333	.333	.500	1.000	.500	.333
	12	PANORAMA	.500	1.000	1.000	1.000	1.000	.500
	13	DRAINAGE DENSITY	.500	.500	1.000	.500	.500	1.000
	14	DRAINAGE FREQUENCY	1.000	1.000	.333	1.000	.333	.333
	15	DRAINAGE ORDER	.500	.500	.500	.500	1.000	1.000
	16	DRAINAGE PATTERN	.250	1.000	.250	.250	1.000	.250
	17	DRAINAGE TEXTURE	.500	.333	.333	1.000	.500	.333
	18	NUMBER OF LAKES	1.000	.500	.333	.333	.333	.500
	19	LAKE DISTRIBUTION	1.000	.500	1.000	.500	.500	.500
	20	NUMBER OF SWAMPS, BOGS	.500	.333	.333	1.000	.333	.500
	21	DISTRIB OF SWAMPS, BOGS	1.000	.500	.500	.500	.500	1.000
		SUBTOTAL	12.25	10.67	11.25	16.42	11.75	12.67
PHYSICAL	UNIQUENESS	INDICES	194.	169.	179.	261.	187.	201.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	1.000	.500	1.000	.500	.500	.500
	23	DOMINANT FLORAL TYPE COM	.200	.200	.200	1.000	.200	.200
	24	FLORAL DIVERSITY	.333	.333	.333	.333	.333	.333
	25	ORNAMENTAL GENERA	.200	1.000	.200	.200	.200	.200
		SUBTOTAL	1.73	2.03	1.73	2.03	1.23	1.23
BIOLOGIC	UNIQUENESS	INDICES	144.	169.	144.	169.	103.	103.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.500	1.000	1.000	1.000	1.000	.500
	27	RESIDENTIAL	1.000	.200	.200	.200	.200	.200
	28	COMMERCIAL	.167	.167	.167	.167	.167	.167
	29	INDUSTRIAL	.333	.333	.333	.333	.333	.333
	30	FOREST	1.000	.500	1.000	.500	.500	.500
	31	MISFITS	.200	1.000	.200	.200	.200	.200
	32	QUARRIES , PITS	.500	1.000	.333	.333	.333	.500
	33	ROADS, RAILROADS	.250	.250	1.000	.250	1.000	.250
	34	BUILDING DENSITY	.500	.250	.250	.250	.500	.250
	35	STRUCTURES	.200	.200	.200	.200	1.000	.200
	36	POPULATION DENSITY	.500	.250	.250	.250	.500	.250
	37	HISTOR, ARCHEOL SITES	1.000	.333	1.000	.333	1.000	.333
		SUBTOTAL	6.15	5.48	5.93	4.02	6.73	3.68
CULTURAL	UNIQUENESS	INDICES	171.	152.	165.	112.	187.	102.
		TOTAL	20.13	18.18	18.92	22.47	19.72	17.58
TOTALUNIQUENESS		INDICES	510.	491.	488.	542.	476.	406.

SUMMARY OF UNIQUENESS INDICES

STREAM		PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE N		261.	169.	112.	542.
LANDSCAPE D		194.	144.	171.	510.
WEA CRK		169.	169.	152.	491.
FLINT CRK		179.	144.	165.	488.
LANDSCAPE A2	1	187.	103.	187.	476.
L WABASH		201.	103.	102.	406.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



AESTHETIC MATRIX

			LANDSCAPE LOCATION					
		*	D	WC	FC	N	A2	LW *
PHYSICAL	FACTORS	*						*
1	CONVEX LANDFORMS	*	.250	.250	.250	1.000	.250	1.000 *
2	CONCAVE LANDFORMS	*	.333	.333	.500	1.000	.333	.500 *
3	DOMINANT LANDFORM TYPE	*	.500	.333	.333	1.000	.500	.333 *
4	LANDFORM DIVERSITY	*	1.000	.333	1.000	.333	.333	1.000 *
5	LANDFORM DISTRIBUTION	*	.500	.333	.333	.500	1.000	.333 *
6	LANDSCAPE DISCONTINUITIE	*	.250	.250	.250	1.000	1.000	.250 *
7	FLOODPLAIN DEVELOPMENT	*	.500	1.000	1.000	1.000	.500	1.000 *
8	TOTAL RELIEF	*	1.000	.500	.500	1.000	.500	.500 *
9	LOCAL RELIEF	*	.500	.500	.500	1.000	.500	1.000 *
10	GROUND SLOPE	*	.333	.333	.500	1.000	.333	.500 *
11	CONTOUR FREQUENCY	*	.333	.333	.500	1.000	.500	.333 *
12	PANORAMA	*	.500	1.000	1.000	1.000	1.000	.500 *
13	DRAINAGE DENSITY	*	.500	.500	1.000	.500	.500	1.000 *
14	DRAINAGE FREQUENCY	*	1.000	1.000	.333	1.000	.333	.333 *
15	DRAINAGE ORDER	*	.500	.500	.500	.500	1.000	1.000 *
16	DRAINAGE PATTERN	*	.250	1.000	.250	.250	1.000	.250 *
17	DRAINAGE TEXTURE	*	.500	.333	.333	1.000	.500	.333 *
18	NUMBER OF LAKES	*	1.000	.500	.333	.333	.333	.500 *
19	LAKE DISTRIBUTION	*	1.000	.500	1.000	.500	.500	.500 *
20	NUMBER OF SWAMPS, BOGS	*	.500	.333	.333	1.000	.333	.500 *
21	DISTRIB OF SWAMPS, BOGS	*	1.000	.500	.500	.500	.500	1.000 *
	SUBTOTAL	*	12.25	10.67	11.25	16.42	11.75	12.67 *
IYSICAL AESTHETIC	INDICES	*	194.	169.	179.	261.	187.	201. *
BIOLOGIC	FACTORS	*						*
22	PERCENT AREA INDIG VEG	*	1.000	.500	1.000	.500	.500	.500 *
23	DOMINANT FLORAL TYPE COM	*	.200	.200	.200	1.000	.200	.200 *
24	FLORAL DIVERSITY	*	.333	.333	.333	.333	.333	.333 *
25	ORNAMENTAL GENERA	*	.200	1.000	.200	.200	.200	.200 *
	SUBTOTAL	*	1.73	2.03	1.73	2.03	1.23	1.23 *
OLOGIC AESTHETIC	INDICES	*	144.	169.	144.	169.	103.	103. *
CULTURAL	FACTORS	*						*
26	AGRICULTURAL	*	.500	1.000	1.000	1.000	1.000	.500 *
27	RESIDENTIAL	*	0	.200	.200	.200	.200	.200 *
28	COMMERCIAL	*	.167	.167	.167	.167	.167	.167 *
29	INDUSTRIAL	*	.333	.333	.333	.333	.333	.333 *
30	FOREST	*	1.000	.500	1.000	.500	.500	.500 *
31	MISFITS	*	.200	1.000	.200	.200	.200	.200 *
32	QUARRIES , PITS	*	0	1.000	.333	.333	.333	0 *
33	ROADS, RAILROADS	*	.250	.250	1.000	.250	0	.250 *
34	BUILDING DENSITY	*	0	.250	.250	.250	0	.250 *
35	STRUCTURES	*	.200	.200	.200	.200	0	.200 *
36	POPULATION DENSITY	*	.500	.250	.250	.250	.500	.250 *
37	HISTOR, ARCHEOL SITES	*	1.000	.333	0	.333	1.000	.333 *
	SUBTOTAL	*	4.15	5.48	4.93	4.02	4.23	3.18 *
LTURAL AESTHETIC	INDICES	*	97.	152.	123.	112.	98.	83. *
	TOTAL	*	18.13	18.18	17.92	22.47	17.22	17.08 *
TOTALAESTHETIC	INDICES	*	436.	491.	446.	542.	387.	387. *

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE N	261.	169.	112.	542.
WEA CRK	169.	169.	152.	491.
FLINT CRK	179.	144.	123.	446.
LANDSCAPE D	194.	144.	97.	436.
L WABASH	201.	103.	83.	387.
LANDSCAPE A2	187.	103.	98.	387.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

G2	LANDSCAPE G2
LF	LAFAYETTE
M2	LANDSCAPE M2
Z	LANDSCAPE Z
L1	LANDSCAPE L1
SW	S WILDCAT CRK

Section 7 landscapes.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION G2	LF	M2	Z	L1	SW
1	CONVEX LANDFORMS	5	1	2	1	1	1
2	CONCAVE LANDFORMS	2	1	5	2	2	1
3	DOMINANT LANDFORM TYPE	3	1	1	1	1	4
4	LANDFORM DIVERSITY	2	2	4	5	2	2
5	LANDFORM DISTRIBUTION	5	4	1	1	1	5
6	LANDSCAPE DISCONTINUITIE	4	1	4	1	3	1
7	FLOODPLAIN DEVELOPMENT	2	1	1	1	4	4
8	TOTAL RELIEF	2	3	1	3	1	5
9	LOCAL RELIEF	1	3	1	2	1	4
10	GROUND SLOPE	1	2	1	3	1	3
11	CONTOUR FREQUENCY	1	2	1	3	2	3
12	PANORAMA	2	4	2	2	3	4
13	DRAINAGE DENSITY	1	1	3	4	3	3
14	DRAINAGE FREQUENCY	1	1	2	1	2	2
15	DRAINAGE ORDER	3	1	1	1	4	5
16	DRAINAGE PATTERN	4	5	1	3	1	1
17	DRAINAGE TEXTURE	5	4	3	1	3	3
18	NUMBER OF LAKES	3	2	2	3	4	2
19	LAKE DISTRIBUTION	5	1	1	1	5	4
20	NUMBER OF SWAMPS, BOGS	1	1	3	3	1	1
21	DISTRIB OF SWAMPS, BOGS	1	3	1	3	3	3
22	PERCENT AREA INDIG VEG	1	1	1	3	2	4
23	DOMINANT FLORAL TYPE COM	2	4	2	4	2	4
24	FLORAL DIVERSITY	3	3	3	5	5	5
25	ORNAMENTAL GENERA	2	5	2	2	2	3
26	AGRICULTURAL	4	1	4	4	4	2
27	RESIDENTIAL	3	5	3	4	4	1
28	COMMERCIAL	1	5	1	1	1	1
29	INDUSTRIAL	1	5	1	1	3	1
30	FOREST	1	1	1	3	2	4
31	MISFITS	4	5	3	1	3	2
32	QUARRIES , PITS	5	1	4	1	1	1
33	ROADS, RAILROADS	3	5	2	3	2	2
34	BUILDING DENSITY	3	5	3	3	2	2
35	STRUCTURES	3	5	3	3	2	2
36	POPULATION DENSITY	2	5	3	3	2	2
37	HISTOR, ARCHEOL SITES	1	5	1	1	2	5

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	4.	1.	0	0	1.
2	CONCAVE LANDFORMS	2.	3.	0	0	1.
3	DOMINANT LANDFORM TYPE	4.	0	1.	1.	0
4	LANDFORM DIVERSITY	0	4.	0	1.	1.
5	LANDFORM DISTRIBUTION	3.	0	0	1.	2.
6	LANDSCAPE DISCONTINUITIE	3.	0	1.	2.	0
7	FLOODPLAIN DEVELOPMENT	3.	1.	0	2.	0
8	TOTAL RELIEF	2.	1.	2.	0	1.
9	LOCAL RELIEF	3.	1.	1.	1.	0
10	GROUND SLOPE	3.	1.	2.	0	0
11	CONTOUR FREQUENCY	2.	2.	2.	0	0
12	PANORAMA	0	3.	1.	2.	0
13	DRAINAGE DENSITY	2.	0	3.	1.	0
14	DRAINAGE FREQUENCY	3.	3.	0	0	0
15	DRAINAGE ORDER	3.	0	1.	1.	1.
16	DRAINAGE PATTERN	3.	0	1.	1.	1.
17	DRAINAGE TEXTURE	1.	0	3.	1.	1.
18	NUMBER OF LAKES	0	3.	2.	1.	0
19	LAKE DISTRIBUTION	3.	0	0	1.	2.
20	NUMBER OF SWAMPS, BOGS	4.	0	2.	0	0
21	DISTRIB OF SWAMPS, BOGS	2.	0	4.	0	0
22	PERCENT AREA INDIG VEG	3.	1.	1.	1.	0
23	DOMINANT FLORAL TYPE COM	0	3.	0	3.	0
24	FLORAL DIVERSITY	0	0	3.	0	3.
25	ORNAMENTAL GENERA	0	4.	1.	0	1.
26	AGRICULTURAL	1.	1.	0	4.	0
27	RESIDENTIAL	1.	0	2.	2.	1.
28	COMMERCIAL	5.	0	0	0	1.
29	INDUSTRIAL	4.	0	1.	0	1.
30	FOREST	3.	1.	1.	1.	0
31	MISFITS	1.	1.	2.	1.	1.
32	QUARRIES , PITS	4.	0	0	1.	1.
33	ROADS, RAILROADS	0	3.	2.	0	1.
34	BUILDING DENSITY	0	2.	3.	0	1.
35	STRUCTURES	0	2.	3.	0	1.
36	POPULATION DENSITY	0	3.	2.	0	1.
37	HISTOR, ARCHEOL SITES	3.	1.	0	0	2.

UNIQUENESS MATRIX

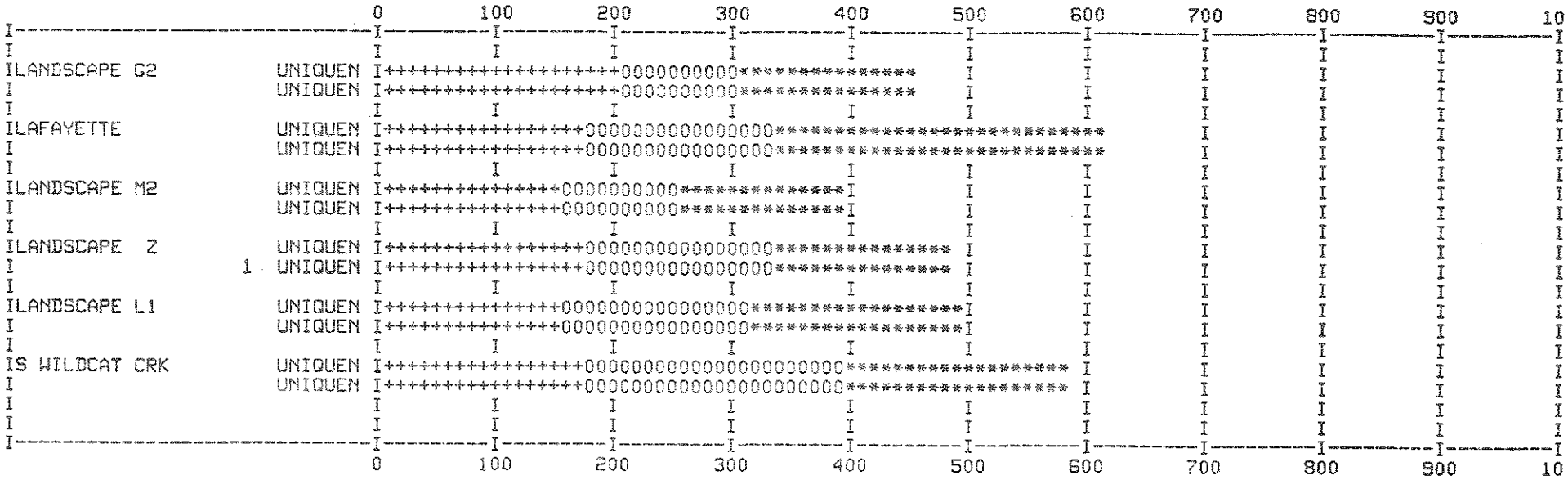
			LANDSCAPE LOCATION					
			G2	LF	M2	Z	L1	SW
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	1.000	.250	1.000	.250	.250	.250
	2	CONCAVE LANDFORMS	.333	.500	1.000	.333	.333	.500
	3	DOMINANT LANDFORM TYPE	1.000	.250	.250	.250	.250	1.000
	4	LANDFORM DIVERSITY	.250	.250	1.000	1.000	.250	.250
	5	LANDFORM DISTRIBUTION	.500	1.000	.333	.333	.333	.500
	6	LANDSCAPE DISCONTINUITIE	.500	.333	.500	.333	1.000	.333
	7	FLOODPLAIN DEVELOPMENT	1.000	.333	.333	.333	.500	.500
	8	TOTAL RELIEF	1.000	.500	.500	.500	.500	1.000
	9	LOCAL RELIEF	.333	1.000	.333	1.000	.333	1.000
	10	GROUND SLOPE	.333	1.000	.333	.500	.333	.500
	11	CONTOUR FREQUENCY	.500	.500	.500	.500	.500	.500
	12	PANORAMA	.333	.500	.333	.333	1.000	.500
	13	DRAINAGE DENSITY	.500	.500	.333	1.000	.333	.333
	14	DRAINAGE FREQUENCY	.333	.333	.333	.333	.333	.333
	15	DRAINAGE ORDER	1.000	.333	.333	.333	1.000	1.000
	16	DRAINAGE PATTERN	1.000	1.000	.333	1.000	.333	.333
	17	DRAINAGE TEXTURE	1.000	1.000	.333	1.000	.333	.333
	18	NUMBER OF LAKES	.500	.333	.333	.500	1.000	.333
	19	LAKE DISTRIBUTION	.500	.333	.333	.333	.500	1.000
	20	NUMBER OF SWAMPS, BOGS	.250	.250	.500	.500	.250	.250
	21	DISTRIB OF SWAMPS, BOGS	.500	.250	.500	.250	.250	.250
		SUBTOTAL	12.67	10.75	9.75	10.92	9.92	11.00
PHYSICAL	UNIQUENESS	INDICES	201.	171.	155.	173.	157.	175.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.333	.333	.333	1.000	1.000	1.000
	23	DOMINANT FLORAL TYPE COM	.333	.333	.333	.333	.333	.333
	24	FLORAL DIVERSITY	.333	.333	.333	.333	.333	.333
	25	ORNAMENTAL GENERA	.250	1.000	.250	.250	.250	1.000
		SUBTOTAL	1.25	2.00	1.25	1.92	1.92	2.67
BIOLOGIC	UNIQUENESS	INDICES	104.	167.	104.	160.	160.	222.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.250	1.000	.250	.250	.250	1.000
	27	RESIDENTIAL	.500	1.000	.500	.500	.500	1.000
	28	COMMERCIAL	.200	1.000	.200	.200	.200	.200
	29	INDUSTRIAL	.250	1.000	.250	.250	1.000	.250
	30	FOREST	.333	.333	.333	1.000	1.000	1.000
	31	MISFITS	1.000	1.000	.500	1.000	.500	1.000
	32	QUARRIES , PITS	1.000	.250	1.000	.250	.250	.250
	33	ROADS, RAILROADS	.500	1.000	.333	.500	.333	.333
	34	BUILDING DENSITY	.333	1.000	.333	.333	.500	.500
	35	STRUCTURES	.333	1.000	.333	.333	.500	.500
	36	POPULATION DENSITY	.333	1.000	.500	.500	.333	.333
	37	HISTOR, ARCHEOL SITES	.333	.500	.333	.333	1.000	.500
		SUBTOTAL	5.37	10.08	4.87	5.45	6.37	6.87
CULTURAL	UNIQUENESS	INDICES	149.	280.	135.	151.	177.	191.
		TOTAL	19.28	22.83	15.87	18.28	18.20	20.53
TOTALUNIQUENESS		INDICES	454.	617.	394.	484.	454.	588.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LAFAYETTE	171.	167.	280.	617.
S WILDCAT CRK	175.	222.	191.	588.
LANDSCAPE L1	157.	160.	177.	494.
LANDSCAPE Z	173.	150.	151.	484.
LANDSCAPE G2	201.	104.	149.	454.
LANDSCAPE M2	155.	104.	135.	394.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



AESTHETIC MATRIX

		LANDSCAPE LOCATION					
		G2	LF	M2	Z	L1	SW
PHYSICAL	FACTORS						
1	CONVEX LANDFORMS	1.000	.250	1.000	.250	.250	.250
2	CONCAVE LANDFORMS	.333	.500	1.000	.333	.333	.500
3	DOMINANT LANDFORM TYPE	1.000	.250	.250	.250	.250	1.000
4	LANDFORM DIVERSITY	.250	.250	1.000	1.000	.250	.250
5	LANDFORM DISTRIBUTION	.500	1.000	.333	.333	.333	.500
6	LANDSCAPE DISCONTINUITIE	.500	.333	.500	.333	1.000	.333
7	FLOODPLAIN DEVELOPMENT	1.000	.333	.333	.333	.500	.500
8	TOTAL RELIEF	1.000	.500	.500	.500	.500	1.000
9	LOCAL RELIEF	.333	1.000	.333	1.000	.333	1.000
10	GROUND SLOPE	.333	1.000	.333	.500	.333	.500
11	CONTOUR FREQUENCY	.500	.500	.500	.500	.500	.500
12	PANORAMA	.333	.500	.333	.333	1.000	.500
13	DRAINAGE DENSITY	.500	.500	.333	1.000	.333	.333
14	DRAINAGE FREQUENCY	.333	.333	.333	.333	.333	.333
15	DRAINAGE ORDER	1.000	.333	.333	.333	1.000	1.000
16	DRAINAGE PATTERN	1.000	1.000	.333	1.000	.333	.333
17	DRAINAGE TEXTURE	1.000	1.000	.333	1.000	.333	.333
18	NUMBER OF LAKES	.500	.333	.333	.500	1.000	.333
19	LAKE DISTRIBUTION	.500	.333	.333	.333	.500	1.000
20	NUMBER OF SWAMPS, BOGS	.250	.250	.500	.500	.250	.250
21	DISTRIB OF SWAMPS, BOGS	.500	.250	.500	.250	.250	.250
	SUBTOTAL	12.67	10.75	9.75	10.92	9.92	11.00
PHYSICAL AESTHETIC	INDICES	201.	171.	155.	173.	157.	175.
BIOLOGIC	FACTORS						
22	PERCENT AREA INDIG VEG	.333	.333	.333	1.000	1.000	1.000
23	DOMINANT FLORAL TYPE COM	.333	.333	.333	.333	.333	.333
24	FLORAL DIVERSITY	.333	.333	.333	.333	.333	.333
25	ORNAMENTAL GENERA	.250	1.000	.250	.250	.250	1.000
	SUBTOTAL	1.25	2.00	1.25	1.92	1.92	2.67
BIOLOGIC AESTHETIC	INDICES	104.	167.	104.	160.	160.	222.
CULTURAL	FACTORS						
26	AGRICULTURAL	.250	1.000	.250	.250	.250	1.000
27	RESIDENTIAL	0	0	0	0	0	1.000
28	COMMERCIAL	.200	0	.200	.200	.200	.200
29	INDUSTRIAL	.250	0	.250	.250	0	.250
30	FOREST	.333	.333	.333	1.000	1.000	1.000
31	MISFITS	0	0	0	1.000	0	1.000
32	QUARRIES , PITS	0	.250	0	.250	.250	.250
33	ROADS, RAILROADS	0	0	.333	0	.333	.333
34	BUILDING DENSITY	0	0	0	0	.500	.500
35	STRUCTURES	0	0	0	0	.500	.500
36	POPULATION DENSITY	.333	0	.500	.500	.333	.333
37	HISTOR, ARCHEOL SITES	0	.500	0	0	1.000	.500
	SUBTOTAL	1.37	2.08	1.87	3.45	4.37	6.87
CULTURAL AESTHETIC	INDICES	24.	24.	41.	79.	108.	191.
	TOTAL	15.28	14.83	12.87	16.28	16.20	20.53
TOTALAESTHETIC	INDICES	330.	361.	299.	412.	425.	588.

SUMMARY OF AESTHETIC INDICES

STREAM		PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
S WILDCAT CRK		175.	222.	191.	588.
LANDSCAPE L1		157.	160.	108.	425.
LANDSCAPE Z	1	173.	160.	79.	412.
LAFAYETTE		171.	167.	24.	361.
LANDSCAPE G2		201.	104.	24.	330.
LANDSCAPE M2		155.	104.	41.	299.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION A	B	C	E	F
1	CONVEX LANDFORMS	2	1	2	1	2
2	CONCAVE LANDFORMS	2	1	2	2	2
3	DOMINANT LANDFORM TYPE	1	2	1	2	1
4	LANDFORM DIVERSITY	1	2	1	4	4
5	LANDFORM DISTRIBUTION	3	2	3	5	4
6	LANDSCAPE DISCONTINUITIE	4	1	4	3	4
7	FLOODPLAIN DEVELOPMENT	1	4	3	4	4
8	TOTAL RELIEF	2	2	3	2	1
9	LOCAL RELIEF	2	3	1	2	1
10	GROUND SLOPE	2	3	1	2	2
11	CONTOUR FREQUENCY	1	3	1	2	2
12	PANORAMA	3	4	2	2	2
13	DRAINAGE DENSITY	1	2	1	1	1
14	DRAINAGE FREQUENCY	3	2	1	2	2
15	DRAINAGE ORDER	1	2	1	2	1
16	DRAINAGE PATTERN	1	2	1	1	4
17	DRAINAGE TEXTURE	3	3	3	4	4
18	NUMBER OF LAKES	1	2	1	3	1
19	LAKE DISTRIBUTION	3	1	3	5	3
20	NUMBER OF SWAMPS, BOGS	1	1	1	5	1
21	DISTRIB OF SWAMPS, BOGS	3	1	3	4	3
22	PERCENT AREA INDIC VEG	1	2	1	1	1
23	DOMINANT FLORAL TYPE COM	1	4	2	2	1
24	FLORAL DIVERSITY	3	3	3	3	3
25	ORNAMENTAL GENERA	1	2	2	1	1
26	AGRICULTURAL	4	4	1	4	5
27	RESIDENTIAL	1	1	1	1	1
28	COMMERCIAL	1	1	1	1	1
29	INDUSTRIAL	1	1	2	4	2
30	FOREST	1	1	1	1	1
31	MISFITS	1	1	2	1	1
32	QUARRIES , PITS	1	5	2	5	1
33	ROADS, RAILROADS	2	2	2	2	2
34	BUILDING DENSITY	2	2	3	3	2
35	STRUCTURES	2	2	2	2	2
36	POPULATION DENSITY	2	2	3	2	2
37	HISTOR, ARCHEOL SITES	3	3	2	1	1

LANDSCAPE AESTETICS.
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

A	LANDSCAPE A
B	LANDSCAPE B
C	LANDSCAPE C
E	LANDSCAPE E
F	LANDSCAPE F

Section 8 landscapes.

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	2.	3.	0	0	0
2	CONCAVE LANDFORMS	1.	4.	0	0	0
3	DOMINANT LANDFORM TYPE	3.	2.	0	0	0
4	LANDFORM DIVERSITY	2.	1.	0	2.	0
5	LANDFORM DISTRIBUTION	0	1.	2.	1.	1.
6	LANDSCAPE DISCONTINUITIE	1.	0	1.	3.	0
7	FLOODPLAIN DEVELOPMENT	1.	0	1.	3.	0
8	TOTAL RELIEF	1.	3.	1.	0	0
9	LOCAL RELIEF	2.	2.	1.	0	0
10	GROUND SLOPE	1.	3.	1.	0	0
11	CONTOUR FREQUENCY	2.	2.	1.	0	0
12	PANORAMA	0	3.	1.	1.	0
13	DRAINAGE DENSITY	4.	1.	0	0	0
14	DRAINAGE FREQUENCY	1.	3.	1.	0	0
15	DRAINAGE ORDER	3.	2.	0	0	0
16	DRAINAGE PATTERN	3.	1.	0	1.	0
17	DRAINAGE TEXTURE	0	0	3.	2.	0
18	NUMBER OF LAKES	3.	1.	1.	0	0
19	LAKE DISTRIBUTION	1.	0	3.	0	1.
20	NUMBER OF SWAMPS, BOGS	4.	0	0	0	1.
21	DISTRIB OF SWAMPS, BOGS	1.	0	3.	1.	0
22	PERCENT AREA INDIG VEG	4.	1.	0	0	0
23	DOMINANT FLORAL TYPE COM	2.	2.	0	1.	0
24	FLORAL DIVERSITY	0	0	5.	0	0
25	ORNAMENTAL GENERA	3.	2.	0	0	0
26	AGRICULTURAL	1.	0	0	3.	1.
27	RESIDENTIAL	5.	0	0	0	0
28	COMMERCIAL	5.	0	0	0	0
29	INDUSTRIAL	2.	2.	0	1.	0
30	FOREST	5.	0	0	0	0
31	MISFITS	4.	1.	0	0	0
32	QUARRIES , PITS	2.	1.	0	0	2.
33	ROADS, RAILROADS	0	5.	0	0	0
34	BUILDING DENSITY	0	3.	2.	0	0
35	STRUCTURES	0	5.	0	0	0
36	POPULATION DENSITY	0	4.	1.	0	0
37	HISTOR, ARCHEOL SITES	2.	1.	2.	0	0

UNIQUENESS MATRIX

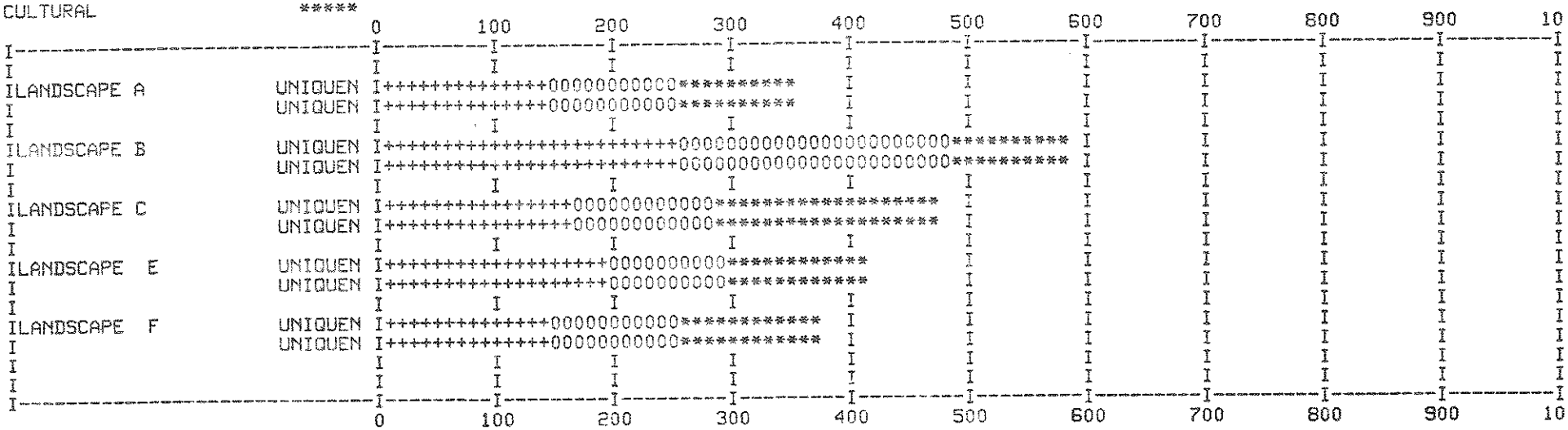
			LANDSCAPE LOCATION				
			A	B	C	E	F
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	.333	.500	.333	.500	.333
	2	CONCAVE LANDFORMS	.250	1.000	.250	.250	.250
	3	DOMINANT LANDFORM TYPE	.333	.500	.333	.500	.333
	4	LANDFORM DIVERSITY	.500	1.000	.500	.500	.500
	5	LANDFORM DISTRIBUTION	.500	1.000	.500	1.000	1.000
	6	LANDSCAPE DISCONTINUITIE	.333	1.000	.333	1.000	.333
	7	FLOODPLAIN DEVELOPMENT	1.000	.333	1.000	.333	.333
	8	TOTAL RELIEF	.333	.333	1.000	.333	1.000
	9	LOCAL RELIEF	.500	1.000	.500	.500	.500
	10	GROUND SLOPE	.333	1.000	1.000	.333	.333
	11	CONTOUR FREQUENCY	.500	1.000	.500	.500	.500
	12	PANORAMA	1.000	1.000	.333	.333	.333
	13	DRAINAGE DENSITY	.250	1.000	.250	.250	.250
	14	DRAINAGE FREQUENCY	1.000	.333	1.000	.333	.333
	15	DRAINAGE ORDER	.333	.500	.333	.500	.333
	16	DRAINAGE PATTERN	.333	1.000	.333	.333	1.000
	17	DRAINAGE TEXTURE	.333	.333	.333	.500	.500
	18	NUMBER OF LAKES	.333	1.000	.333	1.000	.333
	19	LAKE DISTRIBUTION	.333	1.000	.333	1.000	.333
	20	NUMBER OF SWAMPS, BOGS	.250	.250	.250	1.000	.250
	21	DISTRIB OF SWAMPS, BOGS	.333	1.000	.333	1.000	.333
		SUBTOTAL	9.42	16.08	10.08	12.00	9.42
PHYSICAL	UNIQUENESS	INDICES	149.	255.	160.	190.	149.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	.250	1.000	.250	.250	.250
	23	DOMINANT FLORAL TYPE COM	.500	1.000	.500	.500	.500
	24	FLORAL DIVERSITY	.200	.200	.200	.200	.200
	25	ORNAMENTAL GENERA	.333	.500	.500	.333	.333
		SUBTOTAL	1.28	2.70	1.45	1.28	1.28
BIOLOGIC	UNIQUENESS	INDICES	107.	225.	121.	107.	107.
CULTURAL		FACTORS					
	26	AGRICULTURAL	.333	.333	1.000	.333	1.000
	27	RESIDENTIAL	.200	.200	.200	.200	.200
	28	COMMERCIAL	.200	.200	.200	.200	.200
	29	INDUSTRIAL	.500	.500	.500	1.000	.500
	30	FOREST	.200	.200	.200	.200	.200
	31	MISFITS	.250	.250	1.000	.250	.250
	32	QUARRIES , PITS	.500	.500	1.000	.500	.500
	33	ROADS, RAILROADS	.200	.200	.200	.200	.200
	34	BUILDING DENSITY	.333	.333	.500	.500	.333
	35	STRUCTURES	.200	.200	.200	.200	.200
	36	POPULATION DENSITY	.250	.250	1.000	.250	.250
	37	HISTOR, ARCHEOL SITES	.500	.500	1.000	.500	.500
		SUBTOTAL	3.67	3.67	7.00	4.33	4.33
CULTURAL	UNIQUENESS	INDICES	102.	102.	194.	120.	120.
		TOTAL	14.37	22.45	18.53	17.62	15.03
TOTALUNIQUENESS		INDICES	358.	582.	475.	418.	377.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE B	255.	225.	102.	582.
LANDSCAPE C	160.	121.	194.	475.
LANDSCAPE E	190.	107.	120.	418.
LANDSCAPE F	149.	107.	120.	377.
LANDSCAPE A	149.	107.	102.	358.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



AESTHETIC 167 MATRIX

			LANDSCAPE LOCATION				
		*	A	B	C	E	F
PHYSICAL	FACTORS	*					
1	CONVEX LANDFORMS	*	.333	.500	.333	.500	.333
2	CONCAVE LANDFORMS	*	.250	1.000	.250	.250	.250
3	DOMINANT LANDFORM TYPE	*	.333	.500	.333	.500	.333
4	LANDFORM DIVERSITY	*	.500	1.000	.500	.500	.500
5	LANDFORM DISTRIBUTION	*	.500	1.000	.500	1.000	1.000
6	LANDSCAPE DISCONTINUITIE	*	.333	1.000	.333	1.000	.333
7	FLOODPLAIN DEVELOPMENT	*	1.000	.333	1.000	.333	.333
8	TOTAL RELIEF	*	.333	.333	1.000	.333	1.000
9	LOCAL RELIEF	*	.500	1.000	.500	.500	.500
10	GROUND SLOPE	*	.333	1.000	1.000	.333	.333
11	CONTOUR FREQUENCY	*	.500	1.000	.500	.500	.500
12	PANORAMA	*	1.000	1.000	.333	.333	.333
13	DRAINAGE DENSITY	*	.250	1.000	.250	.250	.250
14	DRAINAGE FREQUENCY	*	1.000	.333	1.000	.333	.333
15	DRAINAGE ORDER	*	.333	.500	.333	.500	.333
16	DRAINAGE PATTERN	*	.333	1.000	.333	.333	1.000
17	DRAINAGE TEXTURE	*	.333	.333	.333	.500	.500
18	NUMBER OF LAKES	*	.333	1.000	.333	1.000	.333
19	LAKE DISTRIBUTION	*	.333	1.000	.333	1.000	.333
20	NUMBER OF SWAMPS, BOGS	*	.250	.250	.250	1.000	.250
21	DISTRIB OF SWAMPS, BOGS	*	.333	1.000	.333	1.000	.333
	SUBTOTAL	*	9.42	16.08	10.08	12.00	9.42
PHYSICAL AESTHETIC	INDICES	*	149.	255.	160.	190.	149.
BIOLOGIC	FACTORS	*					
22	PERCENT AREA INDIC VEG	*	.250	1.000	.250	.250	.250
23	DOMINANT FLORAL TYPE COM	*	.500	1.000	.500	.500	.500
24	FLORAL DIVERSITY	*	.200	.200	.200	.200	.200
25	ORNAMENTAL GENERA	*	.333	.500	.500	.333	.333
	SUBTOTAL	*	1.28	2.70	1.45	1.28	1.28
BIOLOGIC AESTHETIC	INDICES	*	107.	225.	121.	107.	107.
CULTURAL	FACTORS	*					
26	AGRICULTURAL	*	.333	.333	1.000	.333	1.000
27	RESIDENTIAL	*	.200	.200	.200	.200	.200
28	COMMERCIAL	*	.200	.200	.200	.200	.200
29	INDUSTRIAL	*	.500	.500	.500	0	.500
30	FOREST	*	.200	.200	.200	.200	.200
31	MISFITS	*	.250	.250	1.000	.250	.250
32	QUARRIES , PITS	*	.500	0	1.000	0	.500
33	ROADS, RAILROADS	*	.200	.200	.200	.200	.200
34	BUILDING DENSITY	*	.333	.333	0	0	.333
35	STRUCTURES	*	.200	.200	.200	.200	.200
36	POPULATION DENSITY	*	.250	.250	1.000	.250	.250
37	HISTOR, ARCHEOL SITES	*	.500	.500	1.000	0	0
	SUBTOTAL	*	3.67	3.17	6.50	1.83	3.83
CULTURAL AESTHETIC	INDICES	*	102.	86.	178.	41.	101.
	TOTAL	*	14.37	21.95	18.03	15.12	14.53
TOTALAESTHETIC	INDICES	*	358.	566.	459.	339.	358.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE B	255.	225.	86.	566.
LANDSCAPE C	160.	121.	178.	459.
LANDSCAPE A	148.	107.	102.	358.
LANDSCAPE F	148.	107.	101.	358.
LANDSCAPE E	190.	107.	41.	338.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

L	LANDSCAPE L
M	LANDSCAPE M
I	LANDSCAPE I
J	LANDSCAPE J
K	LANDSCAPE K
H	LANDSCAPE H
G	LANDSCAPE G

Section 9 landscapes.

LANDSCAPE EVALUATION NUMBERS

FACTOR	LANDSCAPE LOCATION L	M	I	J	K	H	G
1 CONVEX LANDFORMS	2	2	1	1	2	2	1
2 CONCAVE LANDFORMS	2	2	2	2	2	2	2
3 DOMINANT LANDFORM TYPE	1	1	1	1	1	1	2
4 LANDFORM DIVERSITY	1	1	4	4	1	1	2
5 LANDFORM DISTRIBUTION	5	5	4	1	5	5	1
6 LANDSCAPE DISCONTINUITIE	2	2	3	2	2	3	3
7 FLOODPLAIN DEVELOPMENT	2	4	4	2	4	4	4
8 TOTAL RELIEF	1	1	1	2	1	2	2
9 LOCAL RELIEF	2	1	1	2	1	2	2
10 GROUND SLOPE	1	1	2	2	1	2	2
11 CONTOUR FREQUENCY	2	1	2	2	1	2	3
12 PANORAMA	3	3	2	2	3	2	4
13 DRAINAGE DENSITY	1	1	1	3	2	2	1
14 DRAINAGE FREQUENCY	2	3	2	2	1	3	1
15 DRAINAGE ORDER	1	1	3	1	1	3	2
16 DRAINAGE PATTERN	1	1	1	4	4	1	5
17 DRAINAGE TEXTURE	3	3	3	3	4	3	4
18 NUMBER OF LAKES	3	1	4	5	4	2	3
19 LAKE DISTRIBUTION	2	3	1	5	4	5	2
20 NUMBER OF SWAMPS, BOGS	1	1	1	1	2	1	1
21 DISTRIB OF SWAMPS, BOGS	3	3	3	1	4	3	1
22 PERCENT AREA INDIC VEG	2	1	1	1	1	2	3
23 DOMINANT FLORAL TYPE COM	4	2	2	2	2	4	4
24 FLORAL DIVERSITY	5	5	3	3	3	5	5
25 ORNAMENTAL GENERA	1	2	1	1	2	1	2
26 AGRICULTURAL	4	5	5	4	4	4	3
27 RESIDENTIAL	4	3	1	4	3	2	3
28 COMMERCIAL	1	1	1	2	1	1	1
29 INDUSTRIAL	1	1	3	3	5	1	1
30 FOREST	2	1	1	1	1	2	3
31 MISFITS	2	1	2	2	2	1	2
32 QUARRIES , PITS	1	2	3	2	1	1	4
33 ROADS, RAILROADS	3	3	3	3	3	2	3
34 BUILDING DENSITY	3	2	2	3	3	2	3
35 STRUCTURES	3	2	2	3	3	2	3
36 POPULATION DENSITY	2	2	2	2	2	2	2
37 HISTOR, ARCHEOL SITES	2	2	1	2	3	1	2

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	3.	4.	0	0	0
2	CONCAVE LANDFORMS	0	7.	0	0	0
3	DOMINANT LANDFORM TYPE	6.	1.	0	0	0
4	LANDFORM DIVERSITY	4.	1.	0	2.	0
5	LANDFORM DISTRIBUTION	2.	0	0	1.	4.
6	LANDSCAPE DISCONTINUITIE	0	4.	3.	0	0
7	FLOODPLAIN DEVELOPMENT	0	2.	0	5.	0
8	TOTAL RELIEF	4.	3.	0	0	0
9	LOCAL RELIEF	3.	4.	0	0	0
10	GROUND SLOPE	3.	4.	0	0	0
11	CONTOUR FREQUENCY	2.	4.	1.	0	0
12	PANORAMA	0	3.	3.	1.	0
13	DRAINAGE DENSITY	4.	2.	1.	0	0
14	DRAINAGE FREQUENCY	2.	3.	2.	0	0
15	DRAINAGE ORDER	4.	1.	2.	0	0
16	DRAINAGE PATTERN	4.	0	0	2.	1.
17	DRAINAGE TEXTURE	0	0	5.	2.	0
18	NUMBER OF LAKES	1.	1.	2.	2.	1.
19	LAKE DISTRIBUTION	1.	2.	1.	1.	2.
20	NUMBER OF SWAMPS, BOGS	6.	1.	0	0	0
21	DISTRIB OF SWAMPS, BOGS	2.	0	4.	1.	0
22	PERCENT AREA INDIG VEG	4.	2.	1.	0	0
23	DOMINANT FLORAL TYPE COM	0	4.	0	3.	0
24	FLORAL DIVERSITY	0	0	3.	0	4.
25	ORNAMENTAL GENERA	4.	3.	0	0	0
26	AGRICULTURAL	0	0	1.	4.	2.
27	RESIDENTIAL	1.	1.	3.	2.	0
28	COMMERCIAL	6.	1.	0	0	0
29	INDUSTRIAL	4.	0	2.	0	1.
30	FOREST	4.	2.	1.	0	0
31	MISFITS	2.	5.	0	0	0
32	QUARRIES , PITS	3.	2.	1.	1.	0
33	ROADS, RAILROADS	0	1.	5.	0	0
34	BUILDING DENSITY	0	3.	4.	0	0
35	STRUCTURES	0	3.	4.	0	0
36	POPULATION DENSITY	0	7.	0	0	0
37	HISTOR, ARCHEOL SITES	2.	4.	1.	0	0

UNIQUENESS MATRIX

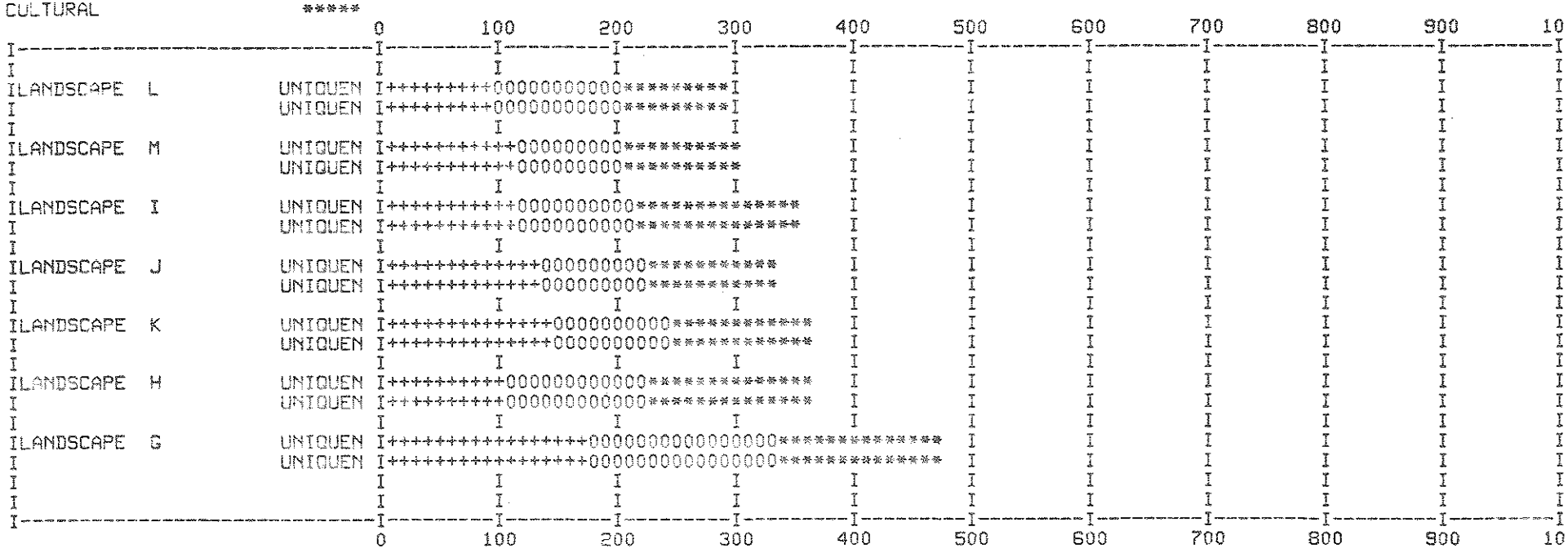
			LANDSCAPE LOCATION L	M	I	J	K	H	
PHYSICAL		FACTORS							
	1	CONVEX LANDFORMS	.250	.250	.333	.333	.250	.250	.
	2	CONCAVE LANDFORMS	.143	.143	.143	.143	.143	.143	.
	3	DOMINANT LANDFORM TYPE	.167	.167	.167	.167	.167	.167	1.
	4	LANDFORM DIVERSITY	.250	.250	.500	.500	.250	.250	1.
	5	LANDFORM DISTRIBUTION	.250	.250	1.000	.500	.250	.250	.
	6	LANDSCAPE DISCONTINUITIE	.250	.250	.333	.250	.250	.333	.
	7	FLOODPLAIN DEVELOPMENT	.500	.200	.200	.500	.200	.200	.
	8	TOTAL RELIEF	.250	.250	.250	.333	.250	.333	.
	9	LOCAL RELIEF	.250	.333	.333	.250	.333	.250	.
	10	GROUND SLOPE	.333	.333	.250	.250	.333	.250	.
	11	CONTOUR FREQUENCY	.250	.500	.250	.250	.500	.250	1.
	12	PANORAMA	.333	.333	.333	.333	.333	.333	1.
	13	DRAINAGE DENSITY	.250	.250	.250	1.000	.500	.500	.
	14	DRAINAGE FREQUENCY	.333	.500	.333	.333	.500	.500	.
	15	DRAINAGE ORDER	.250	.250	.500	.250	.250	.500	1.
	16	DRAINAGE PATTERN	.250	.250	.250	.500	.500	.250	1.
	17	DRAINAGE TEXTURE	.200	.200	.200	.200	.500	.200	.
	18	NUMBER OF LAKES	.500	1.000	.500	1.000	.500	1.000	.
	19	LAKE DISTRIBUTION	.500	1.000	1.000	.500	1.000	.500	.
	20	NUMBER OF SWAMPS, BOGS	.167	.167	.167	.167	1.000	.167	.
	21	DISTRIB OF SWAMPS, BOGS	.250	.250	.250	.500	1.000	.250	.
		SUBTOTAL	5.93	7.13	7.54	8.26	9.01	6.88	11
PHYSICAL	UNIQUENESS	INDICES	94.	113.	120.	131.	143.	109.	1
BIOLOGIC		FACTORS							
	22	PERCENT AREA INDIG VEG	.500	.250	.250	.250	.250	.500	1.
	23	DOMINANT FLORAL TYPE COM	.333	.250	.250	.250	.250	.333	.
	24	FLORAL DIVERSITY	.250	.250	.333	.333	.333	.250	.
	25	ORNAMENTAL GENERA	.250	.333	.250	.250	.333	.250	.
		SUBTOTAL	1.33	1.08	1.08	1.08	1.17	1.33	1
BIOLOGIC	UNIQUENESS	INDICES	111.	90.	90.	90.	97.	111.	1
CULTURAL		FACTORS							
	26	AGRICULTURAL	.250	.500	.500	.250	.250	.250	1.
	27	RESIDENTIAL	.500	.333	1.000	.500	.333	1.000	.
	28	COMMERCIAL	.167	.167	.167	1.000	.167	.167	.
	29	INDUSTRIAL	.250	.250	.500	.500	1.000	.250	.
	30	FOREST	.500	.250	.250	.250	.250	.500	1.
	31	MISFITS	.200	.500	.200	.200	.200	.500	.
	32	QUARRIES , PITS	.333	.500	1.000	.500	.333	.333	1.
	33	ROADS, RAILROADS	.167	.167	.167	.167	.167	1.000	.
	34	BUILDING DENSITY	.250	.333	.333	.250	.250	.333	.
	35	STRUCTURES	.250	.333	.333	.250	.250	.333	.
	36	POPULATION DENSITY	.143	.143	.143	.143	.143	.143	.
	37	HISTOR. ARCHEOL SITES	.250	.250	.500	.250	1.000	.500	.
		SUBTOTAL	3.26	3.73	5.09	4.26	4.34	5.31	5.
CULTURAL	UNIQUENESS	INDICES	91.	104.	141.	118.	121.	147.	1
		TOTAL	10.52	11.94	13.72	13.60	14.52	13.52	18.
TOTALUNIQUENESS		INDICES	296.	307.	351.	340.	361.	368.	47

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE G	179.	160.	138.	478.
LANDSCAPE H	109.	111.	147.	368.
LANDSCAPE K	143.	97.	121.	361.
LANDSCAPE I	120.	90.	141.	351.
LANDSCAPE J	131.	90.	118.	340.
LANDSCAPE M	113.	90.	104.	307.
LANDSCAPE L	94.	111.	91.	296.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



AESTHETIC MATRIX

			LANDSCAPE LOCATION						
		*	L	M	I	J	K	H	G
PHYSICAL	FACTORS	*							
1	CONVEX LANDFORMS	*	.250	.250	.333	.333	.250	.250	.333
2	CONCAVE LANDFORMS	*	.143	.143	.143	.143	.143	.143	.143
3	DOMINANT LANDFORM TYPE	*	.167	.167	.167	.167	.167	.167	1.000
4	LANDFORM DIVERSITY	*	.250	.250	.500	.500	.250	.250	1.000
5	LANDFORM DISTRIBUTION	*	.250	.250	1.000	.500	.250	.250	.500
6	LANDSCAPE DISCONTINUITIE	*	.250	.250	.333	.250	.250	.333	.333
7	FLOODPLAIN DEVELOPMENT	*	.500	.200	.200	.500	.200	.200	.200
8	TOTAL RELIEF	*	.250	.250	.250	.333	.250	.333	.333
9	LOCAL RELIEF	*	.250	.333	.333	.250	.333	.250	.250
10	GROUND SLOPE	*	.333	.333	.250	.250	.333	.250	.250
11	CONTOUR FREQUENCY	*	.250	.500	.250	.250	.500	.250	1.000
12	PANORAMA	*	.333	.333	.333	.333	.333	.333	1.000
13	DRAINAGE DENSITY	*	.250	.250	.250	1.000	.500	.500	.250
14	DRAINAGE FREQUENCY	*	.333	.500	.333	.333	.500	.500	.500
15	DRAINAGE ORDER	*	.250	.250	.500	.250	.250	.500	1.000
16	DRAINAGE PATTERN	*	.250	.250	.250	.500	.500	.250	1.000
17	DRAINAGE TEXTURE	*	.200	.200	.200	.200	.500	.200	.500
18	NUMBER OF LAKES	*	.500	1.000	.500	1.000	.500	1.000	.500
19	LAKE DISTRIBUTION	*	.500	1.000	1.000	.500	1.000	.500	.500
20	NUMBER OF SWAMPS, BOGS	*	.167	.167	.167	.167	1.000	.167	.167
21	DISTRIB OF SWAMPS, BOGS	*	.250	.250	.250	.500	1.000	.250	.500
	SUBTOTAL	*	5.93	7.13	7.54	8.26	9.01	6.88	11.26
YSICAL AESTHETIC	INDICES	*	94.	113.	120.	131.	143.	109.	179.
BIOLOGIC	FACTORS	*							
22	PERCENT AREA INDIG VEG	*	.500	.250	.250	.250	.250	.500	1.000
23	DOMINANT FLORAL TYPE COM	*	.333	.250	.250	.250	.250	.333	.333
24	FLORAL DIVERSITY	*	.250	.250	.333	.333	.333	.250	.250
25	ORNAMENTAL GENERA	*	.250	.333	.250	.250	.333	.250	.333
	SUBTOTAL	*	1.33	1.08	1.08	1.08	1.17	1.33	1.92
OLOGIC AESTHETIC	INDICES	*	111.	90.	90.	90.	97.	111.	160.
CULTURAL	FACTORS	*							
26	AGRICULTURAL	*	.250	.500	.500	.250	.250	.250	1.000
27	RESIDENTIAL	*	0	0	1.000	0	0	1.000	0
28	COMMERCIAL	*	.167	.167	.167	1.000	.167	.167	.167
29	INDUSTRIAL	*	.250	.250	0	0	0	.250	.250
30	FOREST	*	.500	.250	.250	.250	.250	.500	1.000
31	MISFITS	*	.200	.500	.200	.200	.200	.500	.200
32	QUARRIES , PITS	*	.333	.500	1.000	.500	.333	.333	0
33	ROADS, RAILROADS	*	0	0	0	0	0	1.000	0
34	BUILDING DENSITY	*	0	.333	.333	0	0	.333	0
35	STRUCTURES	*	0	.333	.333	0	0	.333	0
36	POPULATION DENSITY	*	.143	.143	.143	.143	.143	.143	.143
37	HISTOR, ARCHEOL SITES	*	.250	.250	0	.250	1.000	0	.250
	SUBTOTAL	*	2.09	3.23	3.93	2.59	2.34	4.81	3.01
LTURAL AESTHETIC	INDICES	*	48.	86.	103.	66.	58.	131.	47.
	TOTAL	*	9.35	11.44	12.55	11.94	12.52	13.02	16.19
TOTALAESTHETIC	INDICES	*	254.	290.	313.	287.	298.	352.	385.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE G	179.	160.	47.	385.
LANDSCAPE H	109.	111.	131.	352.
LANDSCAPE I	120.	90.	103.	313.
LANDSCAPE K	143.	97.	58.	298.
LANDSCAPE M	113.	90.	86.	290.
LANDSCAPE J	131.	90.	66.	287.
LANDSCAPE L	94.	111.	48.	254.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

NW	N WLDCT CRK
UW	U WABASH
SW	S WILDCAT CRK
MW	M WABASH
IC	INDIAN CRK
Y2	LANDSCAPE Y2
B	LANDSCAPE B
N	LANDSCAPE N
G	LANDSCAPE G

Scenic landscapes of Tippecanoe County.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION NW	UW	SW	MW	IC	Y2	B	M	G
1	CONVEX LANDFORMS	3	3	1	1	3	2	1	5	1
2	CONCAVE LANDFORMS	3	4	1	4	3	2	1	5	2
3	DOMINANT LANDFORM TYPE	4	4	4	4	4	1	2	3	2
4	LANDFORM DIVERSITY	2	4	2	4	2	4	2	2	2
5	LANDFORM DISTRIBUTION	5	5	5	5	5	5	2	4	1
6	LANDSCAPE DISCONTINUITIE	1	3	1	3	1	3	1	2	3
7	FLOODPLAIN DEVELOPMENT	4	5	4	4	4	1	4	3	4
8	TOTAL RELIEF	3	5	5	4	4	1	2	2	2
9	LOCAL RELIEF	5	5	4	4	5	2	3	1	2
10	GROUND SLOPE	4	4	3	4	4	2	3	1	2
11	CONTOUR FREQUENCY	4	3	3	4	5	2	3	1	3
12	PANORAMA	3	2	4	3	4	3	4	1	4
13	DRAINAGE DENSITY	4	3	3	2	5	5	2	1	1
14	DRAINAGE FREQUENCY	3	2	2	1	5	5	2	1	1
15	DRAINAGE ORDER	5	5	5	5	3	2	2	1	2
16	DRAINAGE PATTERN	1	5	1	5	1	1	2	1	5
17	DRAINAGE TEXTURE	3	3	3	4	1	2	3	5	4
18	NUMBER OF LAKES	2	5	2	3	2	5	2	1	3
19	LAKE DISTRIBUTION	5	5	4	5	5	5	1	1	2
20	NUMBER OF SWAMPS, BOGS	1	5	1	2	1	1	1	4	1
21	DISTRIB OF SWAMPS, BOGS	3	5	3	5	3	3	1	1	1
22	PERCENT AREA INDIG VEG	4	3	4	3	5	4	2	1	3
23	DOMINANT FLORAL TYPE COM	4	2	4	2	4	2	4	2	4
24	FLORAL DIVERSITY	5	5	5	5	5	3	3	3	5
25	ORNAMENTAL GENERA	3	2	3	2	2	1	2	2	2
26	AGRICULTURAL	2	3	2	1	1	2	4	5	3
27	RESIDENTIAL	1	3	1	5	3	4	1	1	3
28	COMMERCIAL	1	1	1	4	1	1	1	1	1
29	INDUSTRIAL	2	2	1	4	1	2	1	1	1
30	FOREST	4	3	4	3	5	4	1	1	3
31	MISFITS	1	1	2	4	2	1	1	1	2
32	QUARRIES , PITS	4	2	1	5	2	1	5	1	4
33	ROADS, RAILROADS	2	2	2	4	2	2	2	2	3
34	BUILDING DENSITY	2	2	2	4	2	2	2	2	3
35	STRUCTURES	2	3	2	4	2	2	2	2	3
36	POPULATION DENSITY	2	2	2	4	2	2	2	2	2
37	HISTOR, ARCHEOL SITES	4	5	5	4	3	2	3	5	2

NUMBER OF LANDSCAPES IN EACH CATAGORY

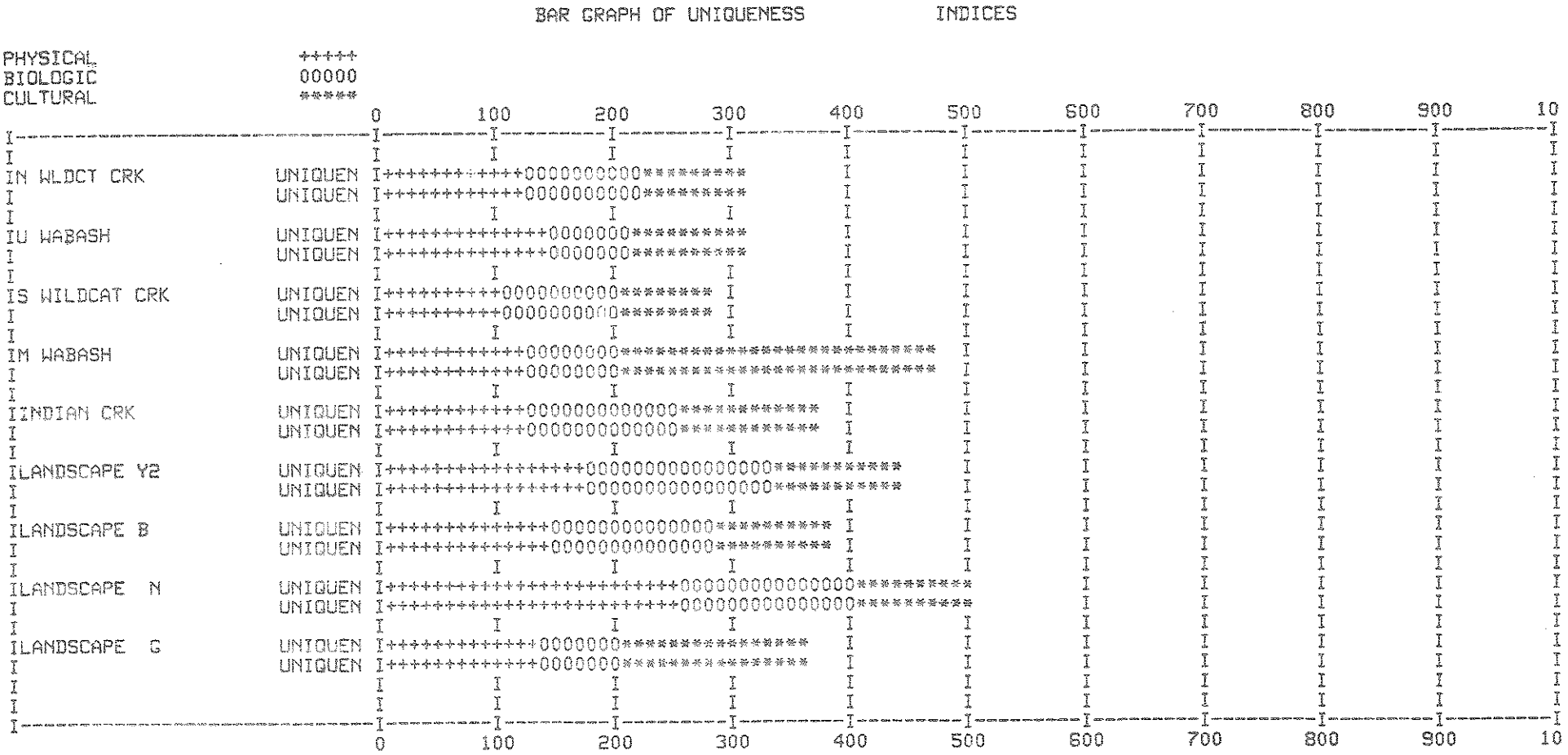
	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	4.	1.	3.	0	1.
2	CONCAVE LANDFORMS	2.	2.	2.	3.	1.
3	DOMINANT LANDFORM TYPE	1.	2.	1.	5.	0
4	LANDFORM DIVERSITY	0	6.	0	3.	0
5	LANDFORM DISTRIBUTION	1.	1.	0	1.	6.
6	LANDSCAPE DISCONTINUITIE	4.	1.	4.	0	0
7	FLOODPLAIN DEVELOPMENT	1.	0	1.	6.	1.
8	TOTAL RELIEF	1.	3.	1.	2.	2.
9	LOCAL RELIEF	1.	2.	1.	2.	3.
10	GROUND SLOPE	1.	2.	2.	4.	0
11	CONTOUR FREQUENCY	1.	1.	4.	2.	1.
12	PANORAMA	1.	1.	3.	4.	0
13	DRAINAGE DENSITY	2.	2.	2.	1.	2.
14	DRAINAGE FREQUENCY	3.	3.	1.	0	2.
15	DRAINAGE ORDER	1.	3.	1.	0	4.
16	DRAINAGE PATTERN	5.	1.	0	0	3.
17	DRAINAGE TEXTURE	1.	1.	4.	2.	1.
18	NUMBER OF LAKES	1.	4.	2.	0	2.
19	LAKE DISTRIBUTION	2.	1.	0	1.	5.
20	NUMBER OF SWAMPS, BOGS	3.	1.	0	1.	1.
21	DISTRIB OF SWAMPS, BOGS	3.	0	4.	0	2.
22	PERCENT AREA INDIG VEG	1.	1.	3.	3.	1.
23	DOMINANT FLORAL TYPE COM	0	4.	0	5.	0
24	FLORAL DIVERSITY	0	0	3.	0	6.
25	ORNAMENTAL GENERA	1.	0	2.	0	0
26	AGRICULTURAL	2.	3.	2.	1.	1.
27	RESIDENTIAL	4.	0	3.	1.	1.
28	COMMERCIAL	4.	0	0	1.	0
29	INDUSTRIAL	5.	3.	0	1.	0
30	FOREST	2.	0	3.	3.	1.
31	MISFITS	5.	3.	0	1.	0
32	QUARRIES , PITS	3.	2.	0	2.	2.
33	ROADS, RAILROADS	0	7.	1.	1.	0
34	BUILDING DENSITY	0	7.	1.	1.	0
35	STRUCTURES	0	6.	2.	1.	0
36	POPULATION DENSITY	0	8.	0	1.	0
37	HISTOR, ARCHEOL SITES	0	2.	2.	2.	3.

UNIQUENESS MATRIX

		LANDSCAPE LOCATION *	NW	UW	SW	MW	IC	Y2	B	M	C
PHYSICAL	FACTORS	*									
1	CONVEX LANDFORMS	*	.333	.333	.250	.250	.333	1.000	.250	1.000	.25
2	CONCAVE LANDFORMS	*	.500	.500	.500	.500	.500	.500	.500	1.000	.50
3	DOMINANT LANDFORM TYPE	*	.200	.200	.200	.200	.200	1.000	.500	1.000	.50
4	LANDFORM DIVERSITY	*	.167	.333	.167	.333	.167	.333	.167	.167	.16
5	LANDFORM DISTRIBUTION	*	.167	.167	.167	.167	.167	.167	1.000	1.000	1.00
6	LANDSCAPE DISCONTINUITIE	*	.250	.250	.250	.250	.250	.250	.250	1.000	.25
7	FLOODPLAIN DEVELOPMENT	*	.167	1.000	.167	.167	.167	1.000	.167	1.000	.16
8	TOTAL RELIEF	*	1.000	.500	.500	.500	.500	1.000	.333	.333	.33
9	LOCAL RELIEF	*	.333	.333	.500	.500	.333	.500	1.000	1.000	.50
10	GROUND SLOPE	*	.250	.250	.500	.250	.250	.500	.500	1.000	.50
11	CONTOUR FREQUENCY	*	.500	.250	.250	.500	1.000	1.000	.250	1.000	.25
12	PANORAMA	*	.333	1.000	.250	.333	.250	.333	.250	1.000	.25
13	DRAINAGE DENSITY	*	1.000	.500	.500	.500	.500	.500	.500	.500	.50
14	DRAINAGE FREQUENCY	*	1.000	.333	.333	.333	.500	.500	.333	.333	.33
15	DRAINAGE ORDER	*	.250	.250	.250	.250	1.000	.333	.333	1.000	.33
16	DRAINAGE PATTERN	*	.200	.333	.200	.333	.200	.200	1.000	.200	.33
17	DRAINAGE TEXTURE	*	.250	.250	.250	.500	1.000	1.000	.250	1.000	.50
18	NUMBER OF LAKES	*	.250	.500	.250	.500	.250	.500	.250	1.000	.50
19	LAKE DISTRIBUTION	*	.200	.200	1.000	.200	.200	.200	.500	.500	1.00
20	NUMBER OF SWAMPS, BOGS	*	.167	1.000	.167	1.000	.167	.167	.167	1.000	.16
21	DISTRIB OF SWAMPS, BOGS	*	.250	.500	.250	.500	.250	.250	.333	.333	.33
	SUBTOTAL	*	7.77	8.98	6.90	8.07	8.18	11.23	8.83	16.37	8.6
UNIQUENESS	INDICES	*	123.	143.	110.	128.	130.	178.	140.	260.	138
BIOLOGIC	FACTORS	*									
22	PERCENT AREA INDIG VEG	*	.333	.333	.333	.333	1.000	.333	1.000	1.000	.33
23	DOMINANT FLORAL TYPE COM	*	.200	.250	.200	.250	.200	.250	.200	.250	.200
24	FLORAL DIVERSITY	*	.167	.167	.167	.167	.167	.333	.333	.333	.167
25	ORNAMENTAL GENERA	*	.500	.167	.500	.167	.167	1.000	.167	.167	.167
	SUBTOTAL	*	1.20	.92	1.20	.92	1.53	1.92	1.70	1.75	.87
UNIQUENESS	INDICES	*	100.	76.	100.	76.	128.	160.	142.	146.	72.
CULTURAL	FACTORS	*									
26	AGRICULTURAL	*	.333	.500	.333	.500	.500	.333	1.000	1.000	.500
27	RESIDENTIAL	*	.250	.333	.250	1.000	.333	1.000	.250	.250	.333
28	COMMERCIAL	*	.125	.125	.125	1.000	.125	.125	.125	.125	.125
29	INDUSTRIAL	*	.333	.333	.200	1.000	.200	.333	.200	.200	.200
30	FOREST	*	.333	.333	.333	.333	1.000	.333	.500	.500	.333
31	MISFITS	*	.200	.200	.333	1.000	.333	.200	.200	.200	.333
32	QUARRIES , PITS	*	.500	.500	.333	.500	.500	.333	.500	.333	.500
33	ROADS, RAILROADS	*	.143	.143	.143	1.000	.143	.143	.143	.143	1.000
34	BUILDING DENSITY	*	.143	.143	.143	1.000	.143	.143	.143	.143	1.000
35	STRUCTURES	*	.167	.500	.167	1.000	.167	.167	.167	.167	.500
36	POPULATION DENSITY	*	.125	.125	.125	1.000	.125	.125	.125	.125	.125
37	HISTOR, ARCHEOL SITES	*	.500	.333	.333	.500	.500	.500	.500	.333	.500
	SUBTOTAL	*	3.15	3.57	2.82	9.83	4.07	3.74	3.85	3.52	5.45
UNIQUENESS	INDICES	*	88.	99.	78.	273.	113.	104.	107.	98.	151.
	TOTAL	*	12.12	13.47	10.92	18.82	13.79	16.89	14.39	21.64	14.98
LUNIQUENESS	INDICES	*	311.	318.	288.	478.	371.	442.	389.	503.	361.

SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE N	260.	146.	98.	503.
M WABASH	128.	76.	273.	478.
LANDSCAPE Y2	178.	160.	104.	442.
LANDSCAPE B	140.	142.	107.	389.
INDIAN CRK	130.	128.	113.	371.
LANDSCAPE G	138.	72.	151.	361.
U WABASH	143.	76.	99.	318.
N WLDCT CRK	123.	100.	88.	311.
S WILDCAT CRK	110.	100.	78.	288.


BAR GRAPH OF UNIQUENESS INDICES
PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****
0 100 200 300 400 500 600 700 800 900 10
IN WLDCT CRK UNIQUEN
UNIQUEN
IU WABASH UNIQUEN
UNIQUEN
IS WILDCAT CRK UNIQUEN
UNIQUEN
IM WABASH UNIQUEN
UNIQUEN
IINDIAN CRK UNIQUEN
UNIQUEN
ILANDSCAPE Y2 UNIQUEN
UNIQUEN
ILANDSCAPE B UNIQUEN
UNIQUEN
ILANDSCAPE N UNIQUEN
UNIQUEN
ILANDSCAPE G UNIQUEN
UNIQUEN

AESTHETIC MATRIX

		LANDSCAPE LOCATION								
		NW	UW	SW	MW	IC	Y2	B	N	G
PHYSICAL	FACTORS									
1	CONVEX LANDFORMS	.333	.333	.250	.250	.333	1.000	.250	1.000	.250
2	CONCAVE LANDFORMS	.500	.500	.500	.500	.500	.500	.500	1.000	.500
3	DOMINANT LANDFORM TYPE	.200	.200	.200	.200	.200	1.000	.500	1.000	.500
4	LANDFORM DIVERSITY	.167	.333	.167	.333	.167	.333	.167	.167	.167
5	LANDFORM DISTRIBUTION	.167	.167	.167	.167	.167	.167	1.000	1.000	1.000
6	LANDSCAPE DISCONTINUITIE	.250	.250	.250	.250	.250	.250	.250	1.000	.250
7	FLOODPLAIN DEVELOPMENT	.167	1.000	.167	.167	.167	1.000	.167	1.000	.167
8	TOTAL RELIEF	1.000	.500	.500	.500	.500	1.000	.333	.333	.333
9	LOCAL RELIEF	.333	.333	.500	.500	.333	.500	1.000	1.000	.500
10	GROUND SLOPE	.250	.250	.500	.250	.250	.500	.500	1.000	.500
11	CONTOUR FREQUENCY	.500	.250	.250	.500	1.000	1.000	.250	1.000	.250
12	PANORAMA	.333	1.000	.250	.333	.250	.333	.250	1.000	.250
13	DRAINAGE DENSITY	1.000	.500	.500	.500	.500	.500	.500	.500	.500
14	DRAINAGE FREQUENCY	1.000	.333	.333	.333	.500	.500	.333	.333	.333
15	DRAINAGE ORDER	.250	.250	.250	.250	1.000	.333	.333	1.000	.333
16	DRAINAGE PATTERN	.200	.333	.200	.333	.200	.200	1.000	.200	.333
17	DRAINAGE TEXTURE	.250	.250	.250	.500	1.000	1.000	.250	1.000	.500
18	NUMBER OF LAKES	.250	.500	.250	.500	.250	.500	.250	1.000	.500
19	LAKE DISTRIBUTION	.200	.200	1.000	.200	.200	.200	.500	.500	1.000
20	NUMBER OF SWAMPS, BOGS	.167	1.000	.167	1.000	.167	.167	.167	1.000	.167
21	DISTRIB OF SWAMPS, BOGS	.250	.500	.250	.500	.250	.250	.333	.333	.333
	SUBTOTAL	7.77	8.98	6.90	8.07	8.18	11.23	8.83	16.37	8.67
AESTHETIC	INDICES	123.	143.	110.	128.	130.	178.	140.	260.	138.
BIOLOGIC	FACTORS									
22	PERCENT AREA INDIG VEG	.333	.333	.333	.333	1.000	.333	1.000	1.000	.333
23	DOMINANT FLORAL TYPE COM	.200	.250	.200	.250	.200	.250	.200	.250	.200
24	FLORAL DIVERSITY	.167	.167	.167	.167	.167	.333	.333	.333	.167
25	ORNAMENTAL GENERA	.500	.167	.500	.167	.167	1.000	.167	.167	.167
	SUBTOTAL	1.20	.92	1.20	.92	1.53	1.92	1.70	1.75	.87
AESTHETIC	INDICES	100.	76.	100.	76.	128.	160.	142.	146.	72.
CULTURAL	FACTORS									
26	AGRICULTURAL	.333	.500	.333	.500	.500	.333	1.000	1.000	.500
27	RESIDENTIAL	.250	0	.250	0	0	0	.250	.250	0
28	COMMERCIAL	.125	.125	.125	0	.125	.125	.125	.125	.125
29	INDUSTRIAL	.333	.333	.200	0	.200	.333	.200	.200	.200
30	FOREST	.333	.333	.333	.333	1.000	.333	.500	.500	.333
31	MISFITS	.200	.200	.333	0	.333	.200	.200	.200	.333
32	QUARRIES , PITS	0	.500	.333	0	.500	.333	0	.333	0
33	ROADS, RAILROADS	.143	.143	.143	0	.143	.143	.143	.143	0
34	BUILDING DENSITY	.143	.143	.143	0	.143	.143	.143	.143	0
35	STRUCTURES	.167	0	.167	0	.167	.167	.167	.167	0
36	POPULATION DENSITY	.125	.125	.125	0	.125	.125	.125	.125	.125
37	HISTOR, ARCHEOL SITES	.500	.333	.333	.500	.500	.500	.500	.333	.500
	SUBTOTAL	2.65	2.74	2.82	1.33	3.74	2.74	3.35	3.52	2.12
AESTHETIC	INDICES	70.	69.	78.	15.	98.	70.	84.	98.	42.
	TOTAL	11.62	12.64	10.92	10.32	13.45	15.89	13.89	21.64	11.65
STHETIC	INDICES	293.	288.	288.	220.	356.	408.	366.	503.	252.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
LANDSCAPE N	210.	146.	98.	503.
LANDSCAPE Y2	178.	160.	70.	408.
LANDSCAPE B	140.	142.	84.	368.
INDIAN CRK	130.	128.	98.	356.
N WLDCT CRK	123.	100.	70.	293.
U WABASH	143.	76.	69.	288.
S WILDCAT CRK	110.	100.	78.	288.
LANDSCAPE G	138.	72.	42.	252.
M WABASH	126.	76.	15.	220.

LANDSCAPE AESTETICS,
DEPT. OF GEOS.
PURDUE UNIVERSITY

LOCATION OF LANDSCAPE

UW	U WABASH
TR	TIPPE RVR
SC	SUGAR CRK
SW	S WILDCAT CRK
WC	WEA CRK
FC	FLINT CRK
LW	L WABASH
MI	M WILDCAT CRK
NW	N WLDCT CRK
MW	M WABASH
IC	INDIAN CRK

Selected streams of Tippecanoe County.

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION UW	TR	SC	SW	WC
1	CONVEX LANDFORMS	3	3	3	1	1
2	CONCAVE LANDFORMS	4	4	3	1	2
3	DOMINANT LANDFORM TYPE	4	4	4	4	4
4	LANDFORM DIVERSITY	4	2	2	2	2
5	LANDFORM DISTRIBUTION	5	5	5	5	5
6	LANDSCAPE DISCONTINUITIE	3	3	1	1	1
7	FLOODPLAIN DEVELOPMENT	5	4	4	4	4
8	TOTAL RELIEF	5	3	3	5	3
9	LOCAL RELIEF	5	4	4	4	4
10	GROUND SLOPE	4	3	4	3	3
11	CONTOUR FREQUENCY	3	3	5	3	3
12	PANORAMA	2	3	4	4	4
13	DRAINAGE DENSITY	3	3	4	3	2
14	DRAINAGE FREQUENCY	2	1	3	2	3
15	DRAINAGE ORDER	5	5	3	5	3
16	DRAINAGE PATTERN	5	5	1	1	5
17	DRAINAGE TEXTURE	3	3	2	3	3
18	NUMBER OF LAKES	5	2	2	2	2
19	LAKE DISTRIBUTION	5	5	5	4	5
20	NUMBER OF SWAMPS, BOGS	5	1	1	1	1
21	DISTRIB OF SWAMPS, BOGS	5	3	3	3	3
22	PERCENT AREA INDIC VEG	3	4	5	4	4
23	DOMINANT FLORAL TYPE COM	2	4	4	4	4
24	FLORAL DIVERSITY	5	5	5	5	5
25	ORNAMENTAL GENERA	2	2	2	3	2
26	AGRICULTURAL	3	3	1	2	2
27	RESIDENTIAL	3	1	1	1	1
28	COMMERCIAL	1	1	1	1	1
29	INDUSTRIAL	2	4	1	1	2
30	FOREST	3	4	5	4	4
31	MISFITS	1	1	1	2	2
32	QUARRIES , PITS	2	1	1	1	3
33	ROADS, RAILROADS	2	2	2	2	2
34	BUILDING DENSITY	2	2	2	2	2
35	STRUCTURES	3	2	2	2	2
36	POPULATION DENSITY	2	2	2	2	2
37	HISTOR, ARCHEOL SITES	5	2	1	5	5

LANDSCAPE EVALUATION NUMBERS

	FACTOR	LANDSCAPE LOCATION FC	LW	NI	NW	MW	IC
1	CONVEX LANDFORMS	1	3	3	3	1	3
2	CONCAVE LANDFORMS	1	1	1	3	4	3
3	DOMINANT LANDFORM TYPE	4	4	4	4	4	4
4	LANDFORM DIVERSITY	1	4	2	2	4	2
5	LANDFORM DISTRISUTION	5	5	5	5	5	5
6	LANDSCAPE DISCONTINUITIE	1	1	1	1	3	1
7	FLOODPLAIN DEVELOPMENT	1	5	4	4	4	4
8	TOTAL RELIEF	4	4	3	3	4	4
9	LOCAL RELIEF	4	5	4	5	4	5
10	GROUND SLOPE	5	5	3	4	4	4
11	CONTOUR FREQUENCY	4	3	4	4	4	5
12	PANORAMA	5	3	4	3	3	4
13	DRAINAGE DENSITY	3	4	3	4	2	5
14	DRAINAGE FREQUENCY	2	2	2	3	1	3
15	DRAINAGE ORDER	3	5	3	5	5	3
16	DRAINAGE PATTERN	1	1	1	1	5	1
17	DRAINAGE TEXTURE	3	3	3	3	4	1
18	NUMBER OF LAKES	1	2	1	2	3	2
19	LAKE DISTRIBUTION	3	5	3	5	5	5
20	NUMBER OF SWAMPS, BOGS	1	5	1	3	2	1
21	DISTRIB OF SWAMPS, BOGS	3	5	3	3	2	3
22	PERCENT AREA INDIC VEG	5	4	5	4	3	5
23	DOMINANT FLORAL TYPE COM	4	4	4	4	2	4
24	FLORAL DIVERSITY	5	5	5	5	5	5
25	ORNAMENTAL GENERA	2	2	2	3	2	2
26	AGRICULTURAL	1	3	1	2	1	1
27	RESIDENTIAL	1	1	1	1	5	3
28	COMMERCIAL	1	1	1	1	4	1
29	INDUSTRIAL	1	2	1	2	4	1
30	FOREST	5	4	5	4	3	5
31	MISFITS	1	1	1	1	4	2
32	QUARRIES , PITS	1	5	2	4	5	2
33	ROADS, RAILROADS	1	2	2	2	4	2
34	BUILDING DENSITY	2	2	2	2	4	2
35	STRUCTURES	2	2	2	2	4	2
36	POPULATION DENSITY	2	2	2	2	4	2
37	HISTOR, ARCHEOL SITES	1	5	3	4	4	3

NUMBER OF LANDSCAPES IN EACH CATAGORY

	FACTOR	CATAGORY 1	2	3	4	5
1	CONVEX LANDFORMS	4.	0	7.	0	0
2	CONCAVE LANDFORMS	4.	1.	3.	3.	0
3	DOMINANT LANDFORM TYPE	0	0	0	11.	0
4	LANDFORM DIVERSITY	1.	7.	0	3.	0
5	LANDFORM DISTRIBUTION	0	0	0	0	11.
6	LANDSCAPE DISCONTINUITIE	8.	0	3.	0	0
7	FLOODPLAIN DEVELOPMENT	1.	0	0	8.	2.
8	TOTAL RELIEF	0	0	5.	4.	2.
9	LOCAL RELIEF	0	0	0	7.	4.
10	GROUND SLOPE	0	0	4.	5.	2.
11	CONTOUR FREQUENCY	0	0	5.	4.	2.
12	PANORAMA	0	1.	4.	5.	1.
13	DRAINAGE DENSITY	0	2.	5.	3.	1.
14	DRAINAGE FREQUENCY	2.	5.	3.	0	1.
15	DRAINAGE ORDER	0	0	5.	0	6.
16	DRAINAGE PATTERN	7.	0	0	0	4.
17	DRAINAGE TEXTURE	1.	1.	8.	1.	0
18	NUMBER OF LAKES	2.	7.	1.	0	1.
19	LAKE DISTRIBUTION	0	0	2.	1.	8.
20	NUMBER OF SWAMPS, BOGS	8.	1.	0	0	2.
21	DISTRIB OF SWAMPS, BOGS	0	0	8.	0	3.
22	PERCENT AREA INDIC VEG	0	0	2.	5.	4.
23	DOMINANT FLORAL TYPE COM	0	2.	0	9.	0
24	FLORAL DIVERSITY	0	0	0	0	11.
25	ORNAMENTAL GENERA	0	8.	3.	0	0
26	AGRICULTURAL	5.	3.	3.	0	0
27	RESIDENTIAL	8.	0	2.	0	1.
28	COMMERCIAL	10.	0	0	1.	0
29	INDUSTRIAL	5.	4.	0	2.	0
30	FOREST	0	0	2.	5.	4.
31	MISFITS	7.	3.	0	1.	0
32	QUARRIES , PITS	4.	3.	1.	1.	2.
33	ROADS, RAILROADS	1.	9.	0	1.	0
34	BUILDING DENSITY	0	10.	0	1.	0
35	STRUCTURES	0	9.	1.	1.	0
36	POPULATION DENSITY	0	10.	0	1.	0
37	HISTOR, ARCHEOL SITES	2.	1.	2.	2.	4.

UNIQUENESS MATRIX

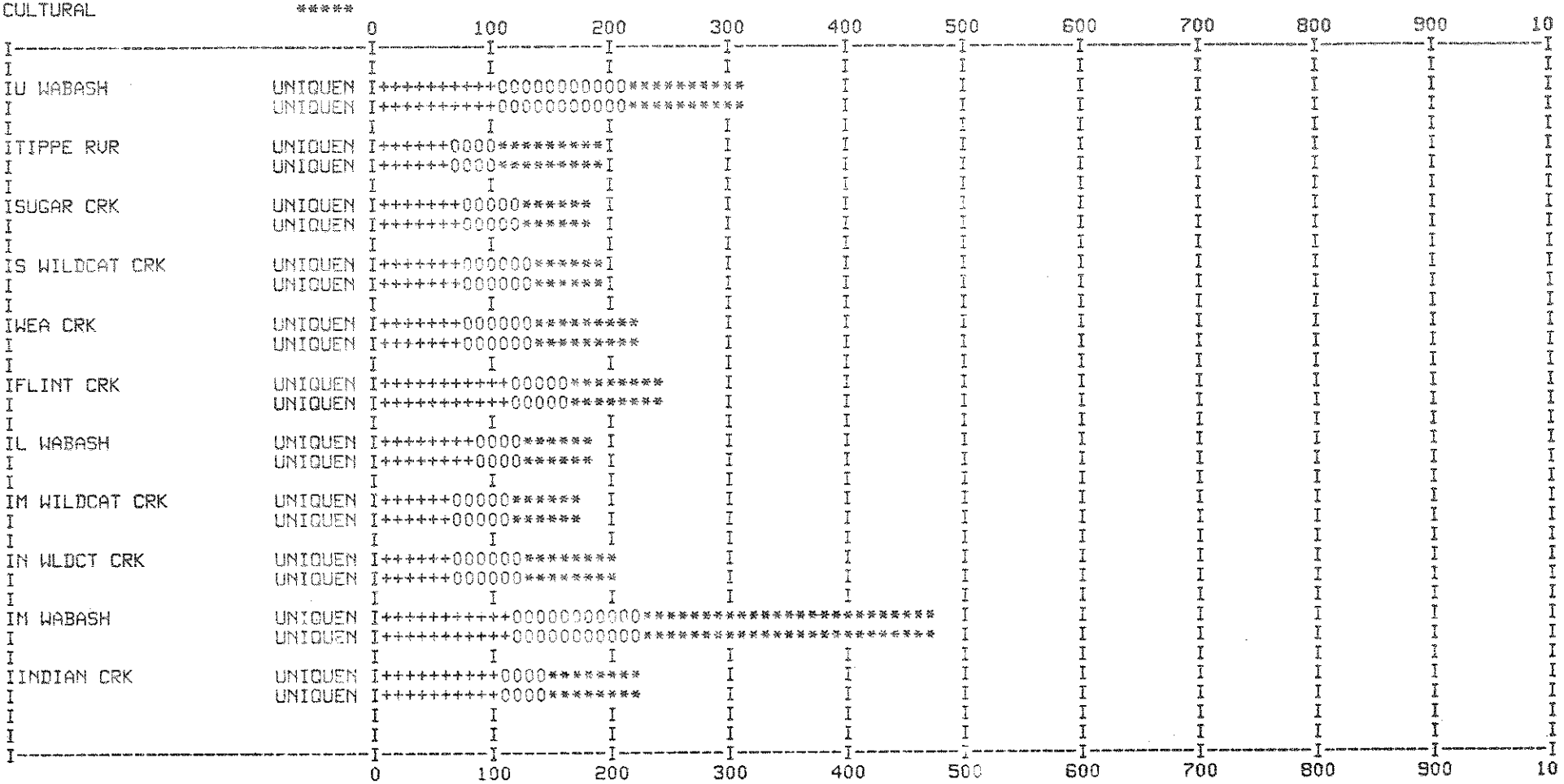
		LANDSCAPE LOCATION					
		FC	LW	MI	NW	MW	IC
PHYSICAL	FACTORS						
1	CONVEX LANDFORMS	.250	.143	.143	.143	.250	.143
2	CONCAVE LANDFORMS	.250	.250	.250	.333	.333	.333
3	DOMINANT LANDFORM TYPE	.091	.091	.091	.091	.091	.091
4	LANDFORM DIVERSITY	1.000	.333	.143	.143	.333	.143
5	LANDFORM DISTRIBUTION	.091	.091	.091	.091	.091	.091
6	LANDSCAPE DISCONTINUITIE	.125	.125	.125	.125	.333	.125
7	FLOODPLAIN DEVELOPMENT	1.000	.500	.125	.125	.125	.125
8	TOTAL RELIEF	.250	.250	.200	.200	.250	.250
9	LOCAL RELIEF	.143	.250	.143	.250	.143	.250
10	GROUND SLOPE	.500	.500	.250	.200	.200	.200
11	CONTOUR FREQUENCY	.250	.200	.250	.250	.250	.500
12	PANORAMA	1.000	.250	.200	.250	.250	.200
13	DRAINAGE DENSITY	.200	.333	.200	.333	.500	1.000
14	DRAINAGE FREQUENCY	.200	.200	.200	.333	.500	1.000
15	DRAINAGE ORDER	.200	.167	.200	.167	.167	.200
16	DRAINAGE PATTERN	.143	.143	.143	.143	.250	.143
17	DRAINAGE TEXTURE	.125	.125	.125	.125	1.000	1.000
18	NUMBER OF LAKES	.500	.143	.500	.143	1.000	.143
19	LAKE DISTRIBUTION	.500	.125	.500	.125	.125	.125
20	NUMBER OF SWAMPS, BOGS	.125	.500	.125	.125	1.000	.125
21	DISTRIB OF SWAMPS, BOGS	.125	.333	.125	.125	.333	.125
	SUBTOTAL	7.07	5.05	4.13	3.82	7.52	6.31
PHYSICAL UNIQUENESS	INDICES	112.	80.	66.	61.	119.	100.
BIOLOGIC	FACTORS						
22	PERCENT AREA INDIG VEG	.250	.200	.250	.200	.500	.250
23	DOMINANT FLORAL TYPE COM	.111	.111	.111	.111	.500	.111
24	FLORAL DIVERSITY	.091	.091	.091	.091	.091	.091
25	ORNAMENTAL GENERA	.125	.125	.125	.333	.125	.125
	SUBTOTAL	.58	.53	.58	.74	1.22	.58
BIOLOGIC UNIQUENESS	INDICES	48.	44.	48.	61.	101.	48.
CULTURAL	FACTORS						
26	AGRICULTURAL	.200	.333	.200	.333	.200	.200
27	RESIDENTIAL	.125	.125	.125	.125	1.000	.500
28	COMMERCIAL	.100	.100	.100	.100	1.000	.100
29	INDUSTRIAL	.200	.250	.200	.250	.500	.200
30	FOREST	.250	.200	.250	.200	.500	.250
31	MISFITS	.143	.143	.143	.143	1.000	.333
32	QUARRIES , PITS	.250	.500	.333	1.000	.500	.333
33	ROADS, RAILROADS	1.000	.111	.111	.111	1.000	.111
34	BUILDING DENSITY	.100	.100	.100	.100	1.000	.100
35	STRUCTURES	.111	.111	.111	.111	1.000	.111
36	POPULATION DENSITY	.100	.100	.100	.100	1.000	.100
37	HISTOR, ARCHEOL SITES	.500	.250	.500	.500	.500	.500
	SUBTOTAL	3.08	2.32	2.27	3.07	9.20	2.84
CULTURAL UNIQUENESS	INDICES	86.	65.	63.	85.	256.	79.
	TOTAL	10.72	7.90	6.98	7.63	17.94	9.73
TOTALUNIQUENESS	INDICES	246.	189.	177.	207.	476.	227.

UNIQUENESS MATRIX

			LANDSCAPE LOCATION				
			UW	TR	SC	SW	WC
PHYSICAL		FACTORS					
	1	CONVEX LANDFORMS	.143	.143	.143	.250	.250
	2	CONCAVE LANDFORMS	.333	.333	.333	.250	1.000
	3	DOMINANT LANDFORM TYPE	.091	.091	.091	.091	.091
	4	LANDFORM DIVERSITY	.333	.143	.143	.143	.143
	5	LANDFORM DISTRIBUTION	.091	.091	.091	.091	.091
	6	LANDSCAPE DISCONTINUITIE	.333	.333	.125	.125	.125
	7	FLOODPLAIN DEVELOPMENT	.500	.125	.125	.125	.125
	8	TOTAL RELIEF	.500	.200	.200	.500	.200
	9	LOCAL RELIEF	.250	.143	.143	.143	.143
	10	GROUND SLOPE	.200	.250	.200	.250	.250
	11	CONTOUR FREQUENCY	.200	.200	.500	.200	.200
	12	PANORAMA	1.000	.250	.200	.200	.200
	13	DRAINAGE DENSITY	.200	.200	.333	.200	.500
	14	DRAINAGE FREQUENCY	.200	.500	.333	.200	.333
	15	DRAINAGE ORDER	.167	.167	.200	.167	.200
	16	DRAINAGE PATTERN	.250	.250	.143	.143	.250
	17	DRAINAGE TEXTURE	.125	.125	1.000	.125	.125
	18	NUMBER OF LAKES	1.000	.143	.143	.143	.143
	19	LAKE DISTRIBUTION	.125	.125	.125	1.000	.125
	20	NUMBER OF SWAMPS, BOGS	.500	.125	.125	.125	.125
	21	DISTRIB OF SWAMPS, BOGS	.333	.125	.125	.125	.125
		SUBTOTAL	6.87	4.06	4.82	4.59	4.74
PHYSICAL	UNIQUENESS	INDICES	109.	64.	77.	73.	75.
BIOLOGIC		FACTORS					
	22	PERCENT AREA INDIG VEG	.500	.200	.250	.200	.200
	23	DOMINANT FLORAL TYPE COM	.500	.111	.111	.111	.111
	24	FLORAL DIVERSITY	.091	.091	.091	.091	.091
	25	ORNAMENTAL GENERA	.125	.125	.125	.333	.333
		SUBTOTAL	1.22	.53	.58	.74	.74
BIOLOGIC	UNIQUENESS	INDICES	101.	44.	48.	61.	61.
CULTURAL		FACTORS					
	26	AGRICULTURAL	.333	.333	.200	.333	.333
	27	RESIDENTIAL	.500	.125	.125	.125	.125
	28	COMMERCIAL	.100	.100	.100	.100	.100
	29	INDUSTRIAL	.250	.500	.200	.200	.250
	30	FOREST	.500	.200	.250	.200	.200
	31	MISFITS	.143	.143	.143	.333	.333
	32	QUARRIES , PITS	.333	.250	.250	.250	1.000
	33	ROADS, RAILROADS	.111	.111	.111	.111	.111
	34	BUILDING DENSITY	.100	.100	.100	.100	.100
	35	STRUCTURES	1.000	.111	.111	.111	.111
	36	POPULATION DENSITY	.100	.100	.100	.100	.100
	37	HISTOR, ARCHEOL SITES	.250	1.000	.500	.250	.250
		SUBTOTAL	3.72	3.07	2.19	2.21	3.01
CULTURAL	UNIQUENESS	INDICES	103.	85.	61.	61.	84.
		TOTAL	11.81	7.66	7.58	7.54	8.49
TOTALUNIQUENESS		INDICES	314.	194.	185.	196.	220.

BAR GRAPH OF UNIQUENESS INDICES

PHYSICAL +++++
BIOLOGIC 00000
CULTURAL *****



SUMMARY OF UNIQUENESS INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
M WABASH	119.	101.	256.	476.
U WABASH	109.	101.	103.	314.
FLINT CRK	112.	48.	86.	246.
INDIAN CRK	100.	48.	79.	227.
WEA CRK	75.	61.	84.	220.
N WLDCT CRK	61.	61.	85.	207.
S WILDCAT CRK	73.	61.	61.	196.
TIPPE RVR	64.	44.	85.	194.
L WABASH	80.	44.	65.	189.
SUGAR CRK	77.	48.	61.	185.
M WILDCAT CRK	66.	48.	63.	177.

AESTHETIC MATRIX

			LANDSCAPE LOCATION				
		*	UW	TR	SC	SW	WC *
PHYSICAL	FACTORS	*					*
1	CONVEX LANDFORMS	*	.143	.143	.143	.250	.250 *
2	CONCAVE LANDFORMS	*	.333	.333	.333	.250	1.000 *
3	DOMINANT LANDFORM TYPE	*	.091	.091	.091	.091	.091 *
4	LANDFORM DIVERSITY	*	.333	.143	.143	.143	.143 *
5	LANDFORM DISTRIBUTION	*	.091	.091	.091	.091	.091 *
6	LANDSCAPE DISCONTINUITIE	*	.333	.333	.125	.125	.125 *
7	FLOODPLAIN DEVELOPMENT	*	.500	.125	.125	.125	.125 *
8	TOTAL RELIEF	*	.500	.200	.200	.500	.200 *
9	LOCAL RELIEF	*	.250	.143	.143	.143	.143 *
10	GROUND SLOPE	*	.200	.250	.200	.250	.250 *
11	CONTOUR FREQUENCY	*	.200	.200	.500	.200	.200 *
12	PANORAMA	*	1.000	.250	.200	.200	.200 *
13	DRAINAGE DENSITY	*	.200	.200	.333	.200	.500 *
14	DRAINAGE FREQUENCY	*	.200	.500	.333	.200	.333 *
15	DRAINAGE ORDER	*	.167	.167	.200	.167	.200 *
16	DRAINAGE PATTERN	*	.250	.250	.143	.143	.250 *
17	DRAINAGE TEXTURE	*	.125	.125	1.000	.125	.125 *
18	NUMBER OF LAKES	*	1.000	.143	.143	.143	.143 *
19	LAKE DISTRIBUTION	*	.125	.125	.125	1.000	.125 *
20	NUMBER OF SWAMPS, BOGS	*	.500	.125	.125	.125	.125 *
21	DISTRIB OF SWAMPS, BOGS	*	.333	.125	.125	.125	.125 *
	SUBTOTAL	*	6.87	4.06	4.82	4.59	4.74 *
PHYSICAL AESTHETIC	INDICES	*	109.	64.	77.	73.	75. *
BIOLOGIC	FACTORS	*					*
22	PERCENT AREA INDIG VEG	*	.500	.200	.250	.200	.200 *
23	DOMINANT FLORAL TYPE COM	*	.500	.111	.111	.111	.111 *
24	FLORAL DIVERSITY	*	.091	.091	.091	.091	.091 *
25	ORNAMENTAL GENERA	*	.125	.125	.125	.333	.333 *
	SUBTOTAL	*	1.22	.53	.58	.74	.74 *
BIOLOGIC AESTHETIC	INDICES	*	101.	44.	48.	61.	61. *
CULTURAL	FACTORS	*					*
26	AGRICULTURAL	*	.333	.333	.200	.333	.333 *
27	RESIDENTIAL	*	0	.125	.125	.125	.125 *
28	COMMERCIAL	*	.100	.100	.100	.100	.100 *
29	INDUSTRIAL	*	.250	0	.200	.200	.250 *
30	FOREST	*	.500	.200	.250	.200	.200 *
31	MISFITS	*	.143	.143	.143	.333	.333 *
32	QUARRIES , PITS	*	.333	.250	.250	.250	1.000 *
33	ROADS, RAILROADS	*	.111	.111	.111	.111	.111 *
34	BUILDING DENSITY	*	.100	.100	.100	.100	.100 *
35	STRUCTURES	*	0	.111	.111	.111	.111 *
36	POPULATION DENSITY	*	.100	.100	.100	.100	.100 *
37	HISTOR, ARCHEOL SITES	*	.250	1.000	0	.250	.250 *
	SUBTOTAL	*	2.22	2.57	1.69	2.21	3.01 *
CULTURAL AESTHETIC	INDICES	*	50.	69.	43.	61.	84. *
	TOTAL	*	10.31	7.16	7.09	7.54	8.49 *
TOTALAESTHETIC	INDICES	*	260.	177.	168.	196.	220. *

			LANDSCAPE LOCATION					
			FC	LW	MI	NW	MW	IC
PHYSICAL		FACTORS						
	1	CONVEX LANDFORMS	.250	.143	.143	.143	.250	.143
	2	CONCAVE LANDFORMS	.250	.250	.250	.333	.333	.333
	3	DOMINANT LANDFORM TYPE	.091	.091	.091	.091	.091	.091
	4	LANDFORM DIVERSITY	1.000	.333	.143	.143	.333	.143
	5	LANDFORM DISTRIBUTION	.091	.091	.091	.091	.091	.091
	6	LANDSCAPE DISCONTINUITIE	.125	.125	.125	.125	.333	.125
	7	FLOODPLAIN DEVELOPMENT	1.000	.500	.125	.125	.125	.125
	8	TOTAL RELIEF	.250	.250	.200	.200	.250	.250
	9	LOCAL RELIEF	.143	.250	.143	.250	.143	.250
	10	GROUND SLOPE	.500	.500	.250	.200	.200	.200
	11	CONTOUR FREQUENCY	.250	.200	.250	.250	.250	.500
	12	PANORAMA	1.000	.250	.200	.250	.250	.200
	13	DRAINAGE DENSITY	.200	.333	.200	.333	.500	1.000
	14	DRAINAGE FREQUENCY	.200	.200	.200	.333	.500	1.000
	15	DRAINAGE ORDER	.200	.167	.200	.167	.167	.200
	16	DRAINAGE PATTERN	.143	.143	.143	.143	.250	.143
	17	DRAINAGE TEXTURE	.125	.125	.125	.125	1.000	1.000
	18	NUMBER OF LAKES	.500	.143	.500	.143	1.000	.143
	19	LAKE DISTRIBUTION	.500	.125	.500	.125	.125	.125
	20	NUMBER OF SWAMPS, BOGS	.125	.500	.125	.125	1.000	.125
	21	DISTRIB OF SWAMPS, BOGS	.125	.333	.125	.125	.333	.125
		SUBTOTAL	7.07	5.05	4.13	3.82	7.52	6.31
PHYSICAL	AESTHETIC	INDICES	112.	80.	66.	61.	119.	100.
BIOLOGIC		FACTORS						
	22	PERCENT AREA INDIG VEG	.250	.200	.250	.200	.500	.250
	23	DOMINANT FLORAL TYPE COM	.111	.111	.111	.111	.500	.111
	24	FLORAL DIVERSITY	.091	.091	.091	.091	.091	.091
	25	ORNAMENTAL GENERA	.125	.125	.125	.333	.125	.125
		SUBTOTAL	.58	.53	.58	.74	1.22	.58
BIOLOGIC	AESTHETIC	INDICES	48.	44.	48.	61.	101.	48.
CULTURAL		FACTORS						
	26	AGRICULTURAL	.200	.333	.200	.333	.200	.200
	27	RESIDENTIAL	.125	.125	.125	.125	0	0
	28	COMMERCIAL	.100	.100	.100	.100	0	.100
	29	INDUSTRIAL	.200	.250	.200	.250	0	.200
	30	FOREST	.250	.200	.250	.200	.500	.250
	31	MISFITS	.143	.143	.143	.143	0	.333
	32	QUARRIES , PITS	.250	0	.333	0	0	.333
	33	ROADS, RAILROADS	1.000	.111	.111	.111	0	.111
	34	BUILDING DENSITY	.100	.100	.100	.100	0	.100
	35	STRUCTURES	.111	.111	.111	.111	0	.111
	36	POPULATION DENSITY	.100	.100	.100	.100	0	.100
	37	HISTOR, ARCHEOL SITES	0	.250	.500	.500	.500	.500
		SUBTOTAL	2.58	1.82	2.27	2.07	1.20	2.34
CULTURAL	AESTHETIC	INDICES	69.	47.	63.	52.	15.	62.
		TOTAL	10.22	7.40	6.98	6.63	9.94	9.23
TOTALAESTHETIC		INDICES	230.	171.	177.	174.	236.	211.

SUMMARY OF AESTHETIC INDICES

STREAM	PHYSICAL	BIOLOGIC	CULTURAL	TOTAL
U WABASH	109.	101.	50.	260.
M WABASH	119.	101.	15.	236.
FLINT CRK	112.	48.	69.	230.
WEA CRK	75.	61.	84.	220.
INDIAN CRK	100.	48.	62.	211.
S WILDCAT CRK	73.	61.	61.	196.
TIPPE RVR	64.	44.	69.	177.
M WILDCAT CRK	66.	48.	63.	177.
N WLDCT CRK	61.	61.	52.	174.
L WABASH	80.	44.	47.	171.
SUGAR CRK	77.	48.	43.	168.